Di251 / Di351

SERVICE MANUAL

[GENERAL]

4011-7990-11

INDEX (GENERAL)

GENERAL

MECHANICAL/ELECTRICAL

GENERAL

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1. SAFETY INFORMATION

Laser Safety

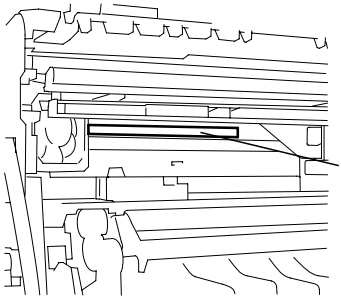
CAUTION: The use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. Because of this, Minolta strongly recommends that you operate your copy machine only as described in this documentation.

Internal Laser Radiation

Maximum Average Radiation Power: 19.5 µW (Di251)/27.8 µW (Di351) at laser aperture of the print head unit

Wavelength: 770-795 nm (Di251)
775-795 nm (Di351)

This product employs a Class 3b Laser Diode that emits an invisible laser beam.
The Laser Diode and Scanning Polygon Mirror are incorporated in the print head unit.
The print head unit is NOT A FIELD SERVICE ITEM.
Therefore, the print head unit should not be opened under any circumstances.



This figure shows the view inside the Right Door with the Imaging Unit removed.

CDRH regulation

This copier is certified as a Class I Laser product under the Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

The label shown to page G-4 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5 mW (Di251) 15 mW (Di351) and the wavelength is 770-795 nm (Di251)/775-795 nm (Di351).

For Europe

CAUTION: Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5 mW (Di251) 15 mW (Di351) and the wavelength is 770-795 nm (Di251)/775-795 nm (Di351).

For Denmark

ADVARSEL
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

Dansk: Dette er en halvlederlaser. Laserdiodens højeste styrke er 5 mW (Di251) 15 mW (Di351) og bølgelængden er 770-795 nm (Di251)/775-795 nm (Di351).

For Finland

LUOKAN 1 LASERLAITE

VAROITUS
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARO
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.

Tämä on puolijohdelaser. Laserdiodin suurin teho on 5 mW (Di251)/15 mW (Di351) ja aallonpituus on 770-795 nm (Di251)/775-795 nm (Di351).

For Sweden

KLASS 1 LASER APPARAT

VARNING
Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

VARNING
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.

Det här är en halvledarlaser. Den maximala effekten för laserdioden är 5 mW (Di251) 15 mW (Di351) och våglängden är 770-795 nm (Di251)/775-795 nm (Di351).

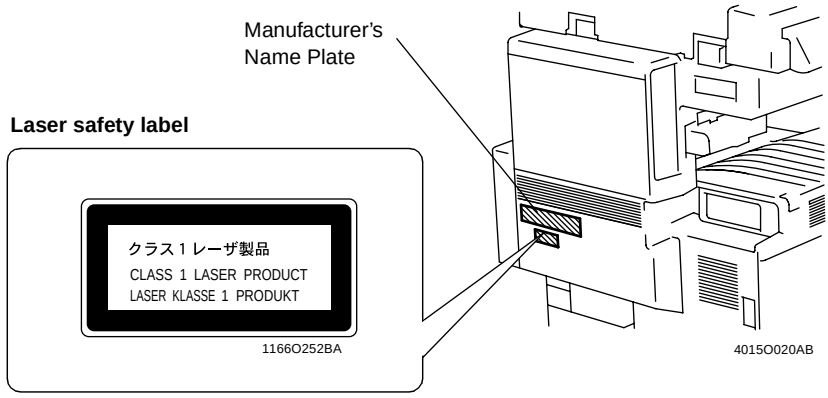
For Norway

ADVERSEL
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.

Dette en halveder laser. Maksimal effekt till laserdiode er 5 mW (Di251)/15 mW (Di351) og bølgelengde er 770-795 nm (Di251)/775-795 nm (Di351).

Laser Safety Label

A laser safety label is attached to the outside of the copy machine as shown below.



The Manufacturer's Name Plate is affixed at the position illustrated above.
Please write down the Model Name and Serial No. of your copier here.

Model:
Serial No.:

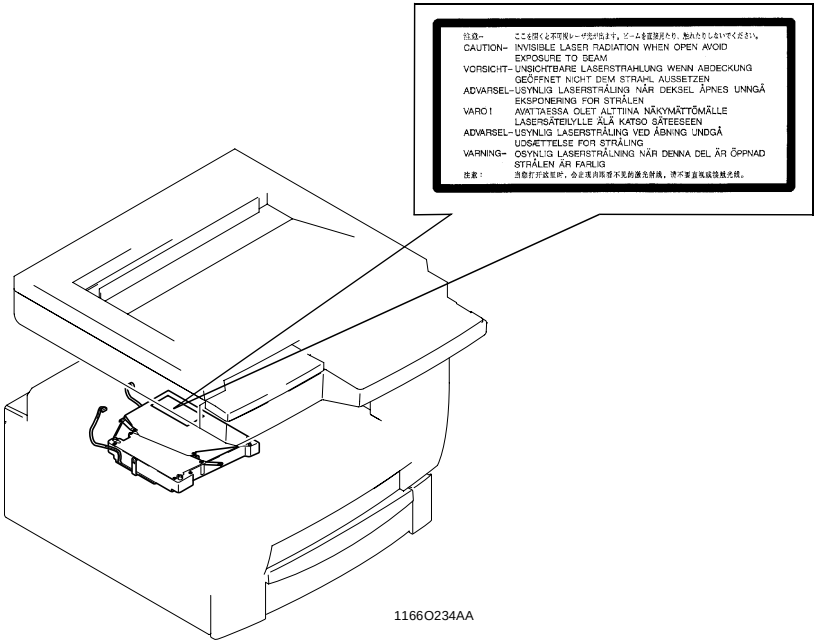
Label inside copy machine

The following laser safety label will be attached inside the copy machine as shown below.

Please read the following for your own protection.

Caution

Opening the cover indicated by the Caution label may expose you to harmful laser radiation which could cause damage or loss of eyesight. Do not open the cover when the power is on.


注意–
CAUTION– INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT– UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL– USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL– USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING– OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意：
1166O234AA

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany only

VORSICHT!

Explosinsgefahr bei unsachgemäßen austausch der batterie.
Ersatz nur durch denselben oder einen vom hersteller empfohlenen ähnlichen typ.
Entsorgung gebrauchter batterien nach angaben des herstellers.

Denmark only

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden only

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland only

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

ALL Areas

CAUTION

"Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used IC Package according to the manufacturer's instructions."

Germany only

VORSICHT!

"Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

2. SPECIFICATION

TYPE	:	Console/Desktop Type
ORIGINAL SCANNING SYSTEM	:	CCD Line Sensor
PHOTOCONDUCTOR	:	Organic Photoconductor
COPYING SYSTEM	:	Electrostatic Dry Powdered Image Transfer to Plain Paper with a Laser
RESOLUTION	:	600 dpi
PAPER FEEDING SYSTEM	:	3-way system Manual Feed Tray ...Single 1st Drawer.....250 Sheets (Plain paper) 50 Sheets (Special paper) 2nd Drawer .....500 Sheets (Plain paper) 35 CPM/25 CPM: Standard
EXPOSURE SYSTEM	:	Mirror Scanning, Slit Exposure
DEVELOPING SYSTEM	:	MT-HG System
CHARGING SYSTEM	:	Comb Electrode (1) DC Negative Corona with Scorotron System
IMAGE TRANSFER SYSTEM	:	Roller Image Transfer
PAPER SEPARATING SYSTEM	:	Paper Separator Fingers and Charge Neutralizing Plate
FUSING SYSTEM	:	Heat Roller
PAPER DISCHARGING SYSTEM	:	Charge Neutralizing Brush
MAX. ORIGINAL SIZE	:	A3L, 11" × 17"L

COPY PAPER TYPE

Paper Source		1st Drawer	Manual Feed Tray
Type	Plain paper (60 to 90 g/m^2)	❍	❍
	Transparencies	❍	❍
	Thick paper (91 to 157 g/m^2)	❍	❍
	Postcards (190 g/m^2)	❍	❍
	Recycled paper	❍	❍
Dimensions	Maximum (Width × Length)	297 × 432 mm	297 × 432 mm
	Minimum (Width × Length)	90 × 140 mm	90 × 140 mm

❍: Reliably fed

MULTIPLE COPIES	:	35 CPM (1 to 999), 25 CPM(1 to 99)
WARMING-UP TIME	:	35 CPM (70 sec. or less) 25 CPM (60 sec. or less)
FIRST COPY TIME	:	A4C, 1st Drawer, full size mode 35 CPM (4.6 sec.), 25 CPM (5.8 sec.)

CONTINUOUS COPY SPEED (copies/min)

- Metric -

Size	Speed
A3L	20
B4L	23
A4L	27
A4C	35
B5L	30
B5C	40

- Inch -

Size	Speed
11 × 17L	20
8-1/2 × 14L	23
8-1/2 × 11L	28
8-1/2 × 11C	35

ZOOM RATIOS

		- Metric -	- Inch -
Fixed	Full Size	× 1.000	× 1.000
	Enlargement	× 2.000 × 1.414 × 1.224 × 1.154	× 2.000 × 1.545 × 1.294 × 1.214
	Reduction	× 0.866 × 0.816 × 0.707 × 0.500	× 0.785 × 0.733 × 0.647 × 0.500
Variable	25 % to 400 % (in 0.1 % increments)		

LENS : Through Lens (F = 4.0, f = 62 mm)
EXPOSURE LAMP : Fluorescent Lamp
FUSING TEMPERATURE : 190 °C

POWER/CURRENT CONSUMPTION (copier only)

Exposure Lamp (Rating)	Fusing Roller Heater Lamp (Rating)	Max. Power Consumption (full system)	Max. Current Consumption (full system)
24 V 20 W	35 CPM: 800 W 25 CPM: 800 W	230 V: 1450 W	Metric area 35 CPM/25 CPM: 6 A Inch area 35 CPM/25 CPM: 11.5 A

POWER REQUIREMENTS : 230 V, 50/60 Hz

ENVIRONMENTAL CONDITIONS

Temperature	10 to 32 °C with a fluctuation of 10 °C or less per hour
Humidity	15 to 85 % RH with a fluctuation of 10 % RH or less per hour
Ambient Illumination	3,000 lux or less
Levelness	1° (1.75 mm/100 mm)

COPIER DIMENSIONS	:	Metric area 35 CPM: W...632 mm, D...707 mm, H...647 mm 25 CPM: W...594 mm, D...707 mm, H...647 mm Inch area 35 CPM: W...25, D...27-3/4, H...25-1/2 25 CPM: W...23-1/2, D...27-3/4, H...25-1/2
COPIER WEIGHT	:	Metric area 35 CPM: 60.5 kg, 25 CPM: 58.7 kg Inch area 35 CPM: 133-1/2 lb, 25 CPM: 129-1/2 lb

3. PRECAUTIONS FOR INSTALLATION

3-1. Installation Site

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Where it will be subjected to sudden fluctuations in either temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater, or ventilator.
- Which has poor ventilation or is dusty.
- Which does not have a stable, level floor or where it will receive undue vibration.
- Which is near any kind of heating device.
- Which is near volatile flammables (thinner, gasoline, etc.).
- Where it may be splashed with water.
- Which puts the operator in the direct stream of exhaust from the copier.
- Where ammonia gas might be generated.

3-2. Power Source

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Ensure that the copier does not ride on the power cord or communication cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.
- Make the following checks at frequent intervals:

✻ Is the power plug abnormally hot?
✻ Are there any cracks or scrapes in the cord?
✻ Has the power plug been inserted fully into the outlet?
✻ Does something, including the copier itself, ride on the power cord?

Use an outlet with a capacity of 15 A or more. 220 to 240 V, 10 A or more.

3-3. Grounding

- Always ground the copier to prevent receiving electrical shocks in the case of electrical leakage.
- Connect the ground wire to the ground terminal of the outlet or a grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, lightning arrester, or a water pipe for fear of fire and electrical shock.

4. PRECAUTIONS FOR USE

4-1. To ensure that the copier is used in an optimum condition

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the copier while it is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the power switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the power switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

4-2. Operating Environment

The operating environmental requirements of the copier are as follows.

- Temperature: 10 to 32 °C
- Humidity: 15 to 85 % RH
- Rate of temperature change: 10 °C/h
- Rate of humidity change: 10 % RH/h

4-3. Power Requirements

The power source voltage requirements are as follows.

- Voltage fluctuation: AC 220 to 240 V ±10 %
  (copying performance assured)
  +10 %/-15 % (paper feeding performance assured)
- Frequency fluctuation: 50/60 Hz ±0.3 %

4-4. Note

- It is prohibited to copy paper and hard currencies, government securities, and municipal bonds (even when they are stamped as “Sample”).
- For fear of infringement of copyright, it is also prohibited to copy copyrighted works, including books, music, works of art, maps, drawings, motion pictures, and photos except when the copy is to be used only personally.

5. HANDLING OF CONSUMABLES

Before using any consumables, always read the label on its container carefully.

- Paper can be easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded in the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.
- Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).
- Do not store consumables in a place which:

✻ Is hot and humid.
✻ Is subject to direct sunlight.
✻ Has an open flame nearby.

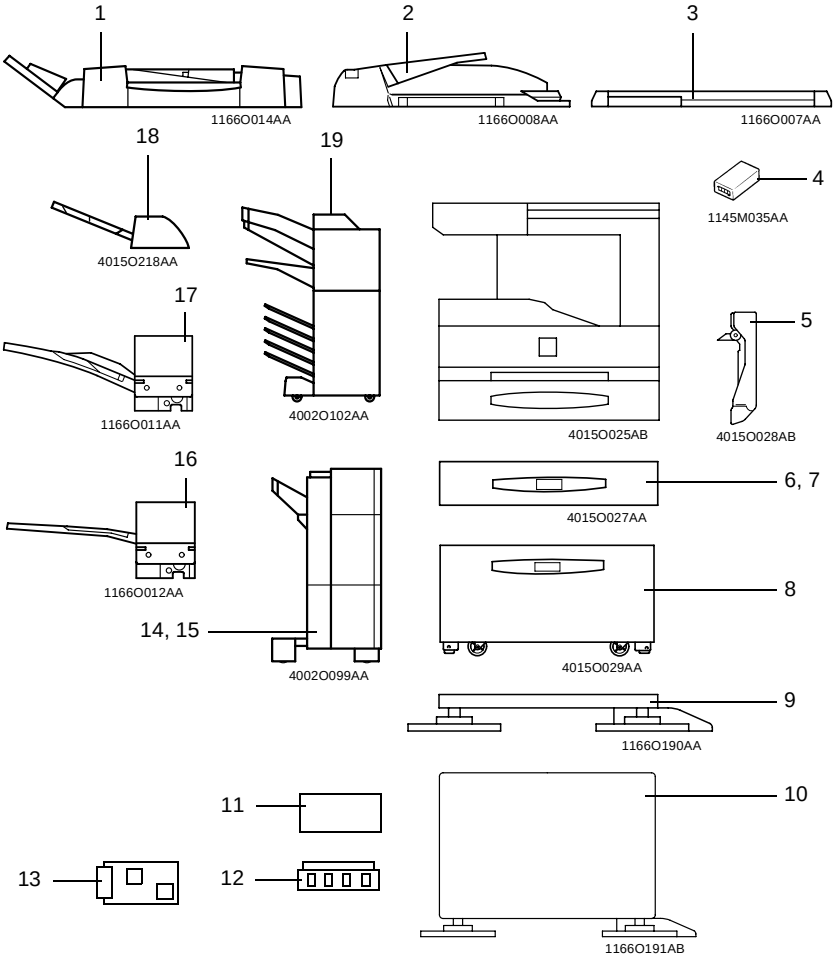
6. OTHER PRECAUTIONS

Use the following precautions when performing service jobs for a copier that uses a laser.

- When a service job needs to be performed in the laser beam path, such as when working around the printerhead or PC Drum, be sure first to unplug the power cord of the copier from the outlet.
- If the job requires that the power cord be left plugged in, observe the following precautions.

1. Take off your watch, ring and any other reflective object and wear laser protective goggles.
2. Keep users away from the job site.
3. Do not bring a highly reflective tool into the laser beam path during the service job.

7. SYSTEM OPTIONS



1. Duplexing Document Feeder AFR-17
2. Automatic Document Feeder AF-9
3. Original Cover Kit OC-3
4. Plug-In Counter
5. Duplex Unit AD-15 (35 CPM: Standard)
6. Paper Feed Unit PF-118
7. Paper Feed Unit PF-119
   (35 CPM/25 CPM: Standard)
8. Large Capacity Cabinet PF-117
9. Copy Table
10. Copy Desk
11. Printer Controller Pi3502
12. 8MB/16MB/32MB Memory
13. Data Terminal DT-103
14. Finisher FN-109
15. Finisher FN-110
16. Job Tray JS-201
17. Shift Tray OT-102
18. Option Tray JS-100
19. Mailbin Finisher FN-504

MECHANICAL/ ELECTRICAL

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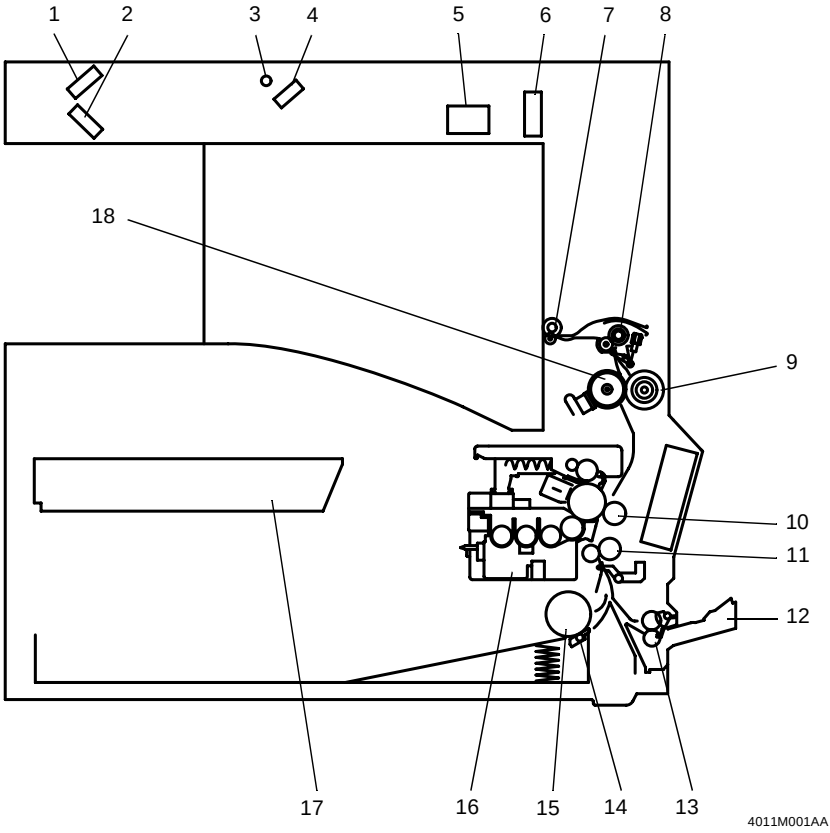
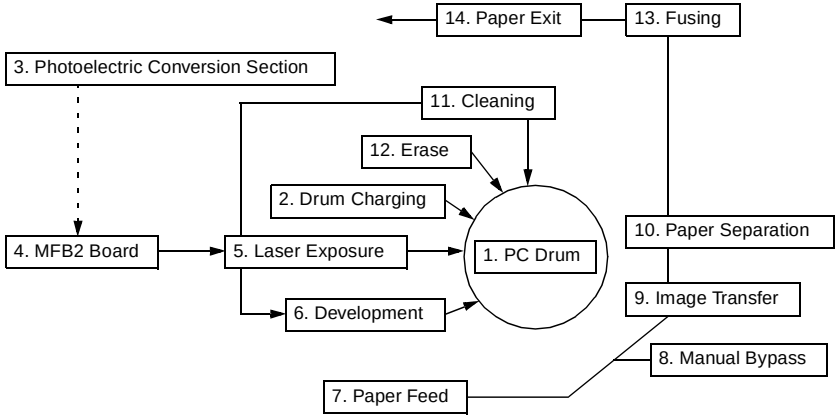
1. CROSS-SECTIONAL VIEW



1. 2nd Mirror
2. 3rd Mirror
3. Exposure Lamp
4. 1st Mirror
5. Lens
6. CCD Unit
7. Paper Exit Roller
8. Fusing Transport Roller
9. Right Fusing Roller
10. Image Transfer Roller
11. Synchronizing Roller
12. Manual Bypass Tray
13. Manual Feed Paper Take-Up Roll
14. Paper Separator Pad
15. Paper Take-Up Roll
16. Imaging Cartridge I/C
17. PH Unit
18. Left Fusing Roller

2. COPYING PROCESS



1. PC Drum
- Changes the image of the original projected onto the surface of the drum to a corresponding electrostatic latent image.

2. Drum Charging
- Generates a negative DC charged layer on the surface of the PC Drum.

3. Photoelectric Conversion Section
- The CCD converts the light reflected off the original to a corresponding electrical signal and outputs it to the IR image processing section.

4. MFB2 Board
- Converts the electrical signal to a corresponding 8-bit digital image signal, makes various corrections, and outputs the results to the memory.
- Compresses and stores in memory the digital image signal, and then outputs it to the PH image processing section.
- After going through necessary corrections, the digital image signal is converted to a corresponding analog signal, based on which the intensity of the laser light is controlled.

5. Laser Exposure
- A laser beam strikes the surface of the PC Drum, creating an electrostatic latent image.

6. Development
- Negatively charged toner adheres to the latent image on the PC Drum surface, creating a visible image.
- AC/DC negative bias voltages are applied to the Sleeve/Magnet Roller, thereby preventing toner from sticking to the background.
- Toner scraped off by the cleaning mechanism is recycled.

7. Paper Feed
- Feeds sheets of paper from the appropriate paper source.

8. Manual Bypass
- Feeds sheets of paper from the Manual Bypass Tray.

9. Image Transfer
- A positive charge is applied to the Image Transfer Roller to transfer the visible image on the surface of the PC Drum onto the paper.

10. Paper Separation
- The PC Drum Separator Fingers remove paper from the surface of the PC Drum.

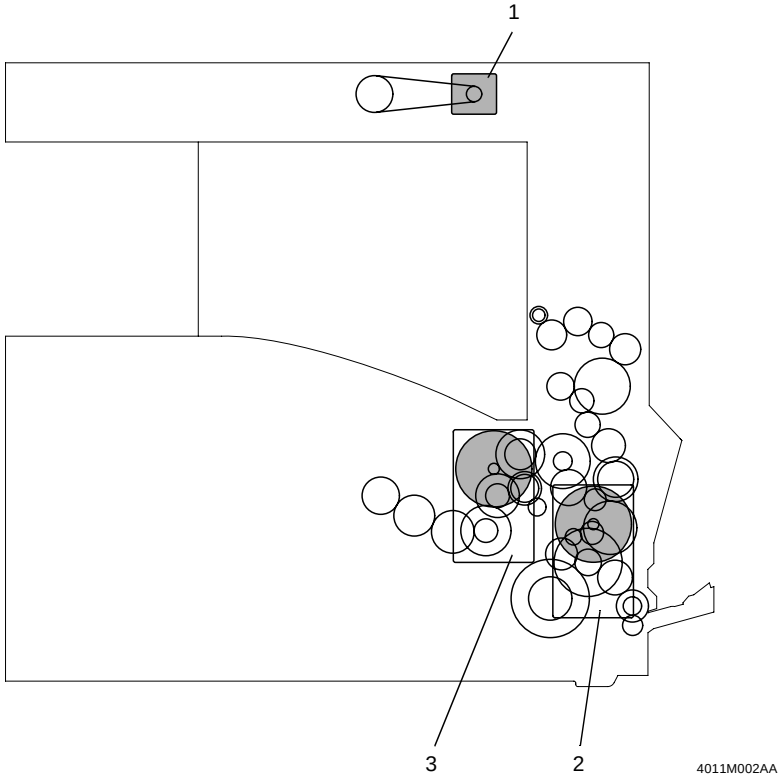
11. Cleaning
- Residual toner is scraped off the surface of the PC Drum.
- The toner is then recycled back to the Developing Unit.

12. Erase
- The PC Drum is exposed to light, which effectively neutralize any residual charge on the surface of the PC Drum.

13. Fusing
- Heat and pressure applied by the Right and Left Fusing Rollers fuse toner on the paper.

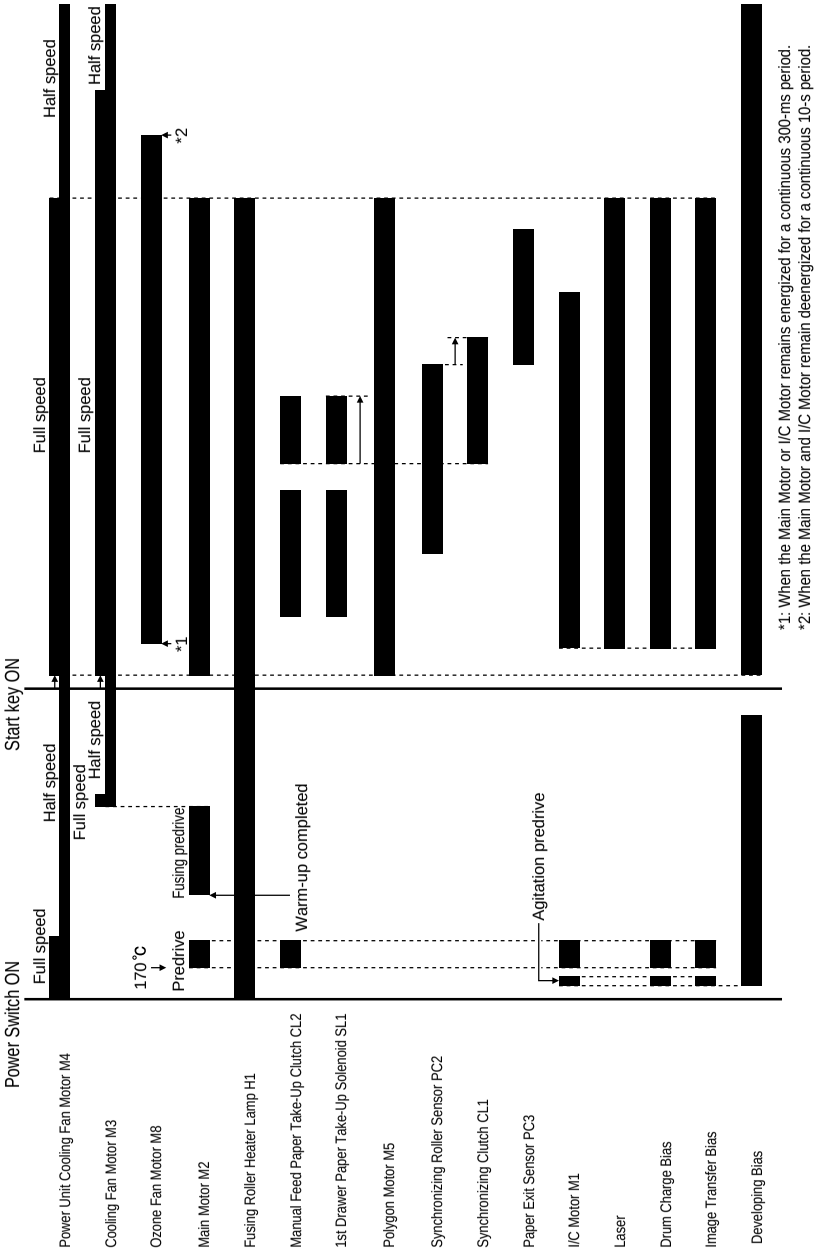
14. Paper Exit
- Feeds paper out of the copier onto the Exit Tray.

3. DRIVE SYSTEM



1. Scanner Motor M10
2. Main Motor M2
3. I/C Motor M1

4. OPERATING SEQUENCE



4011M028CA

5. CPU OVERRUN MONITOR FUNCTION

- The CPU overrun monitor function (watchdog function) is a self-monitoring function that determines whether any of the CPUs mounted on the copier overruns.
- If this function detects that a CPU overruns, the copier automatically resets the CPU, restarting the logic circuit and mechanism.
- The copier CPU not only performs the self-monitoring function, but also checks the communication status with the option's CPU.

5-1. Processing Performed during Watchdog Function

The following operations are performed when a CPU operates erratically.
If a copier CPU overruns:

- All CPUs including those of the options are reset and a restart sequence is performed.
- If the overrun occurs during a copy cycle, the copier tries to feed all sheets of paper out of itself before resetting the CPU. (Any sheet of paper that could not be fed out of the copier is detected as a sheet of paper left when the restart sequence is later carried out.)

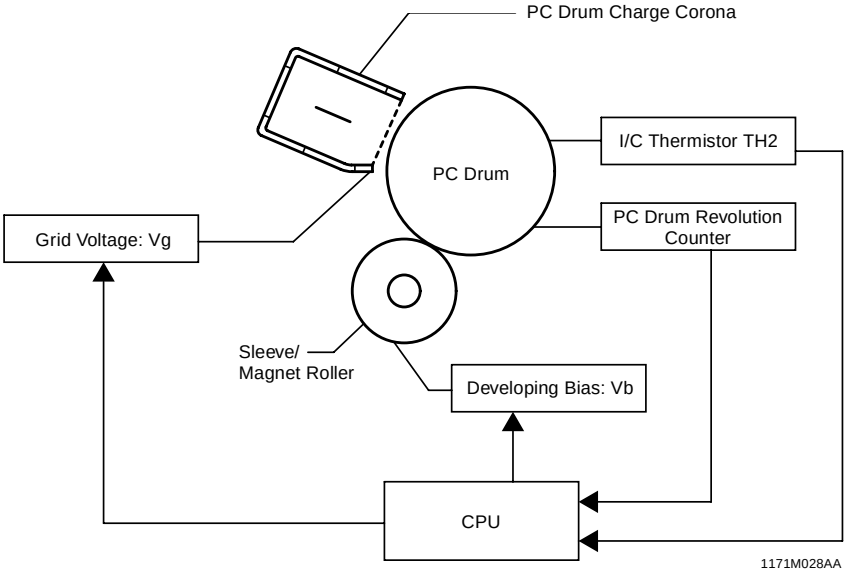
If an erratic operation is detected in communications with the option's CPU:

- The copier turns OFF and ON the option's relay and performs a restart sequence of the option.
- If the overrun occurs during a copy cycle, the copier stops the paper take-up operation, feeds all sheets of paper out of itself, and then performs a restart sequence of the option.

6. IMAGE STABILIZATION SYSTEM

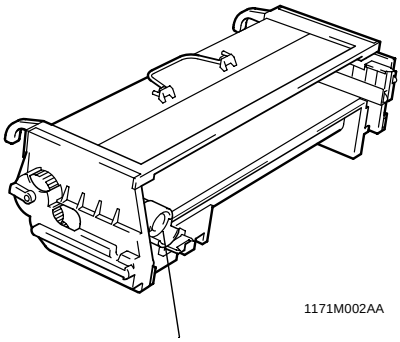
• The following image stabilization controls are provided to ensure stabilized copy image.

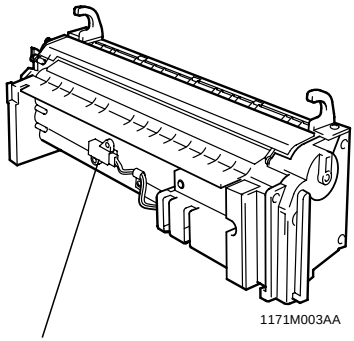
Item	Purpose	Control
PC Drum temperature correction	To compensate for any change in ID due to changing PC Drum temperatures.	I/C Thermistor is used to detect temperature and, according to the detected temperature, Vg/ Vb is corrected.
PC Drum deterioration correction	To compensate for degraded sensitivity caused by a deterio-rating PC Drum.	Vg is corrected according to the period of time during which the PC Drum has turned.



7. IMAGING CARTRIDGE (I/C)

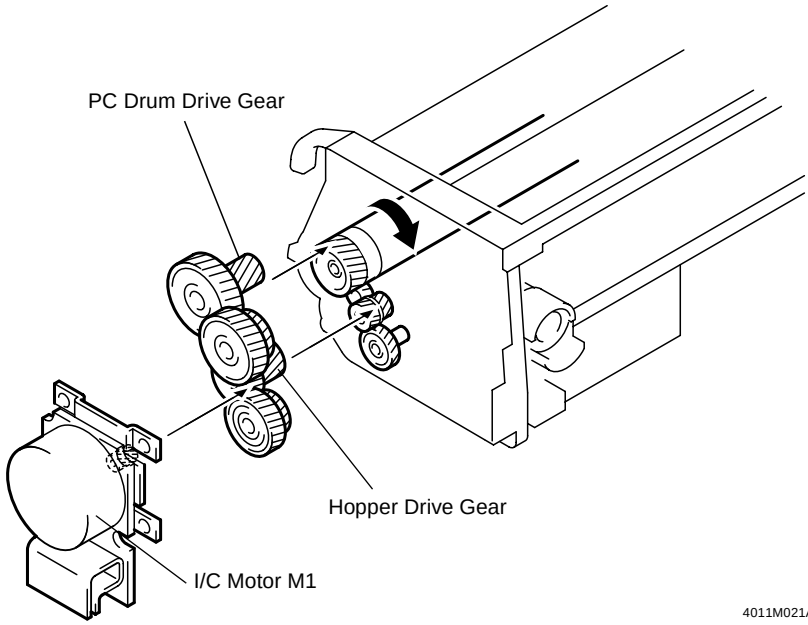
- This copier employs an Imaging Cartridge (“I/C” in this manual).
- The I/C contains a PC Drum, Developing Unit, PC Drum Charge Corona, and a Cleaning Unit as one unit.





7-1. I/C Drive Mechanism

- Drive from the I/C Motor is transmitted via a gear train to the PC Drum and Hopper.



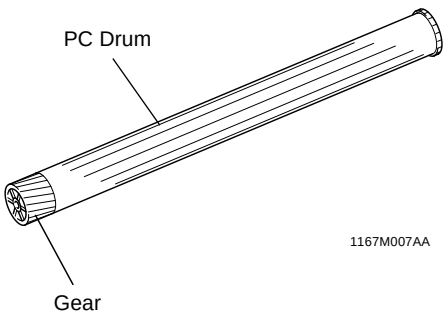
Electrical Component	Control Signal	ON	OFF	Wiring Diagram
M1	PJ5A-3	L	H	5-G

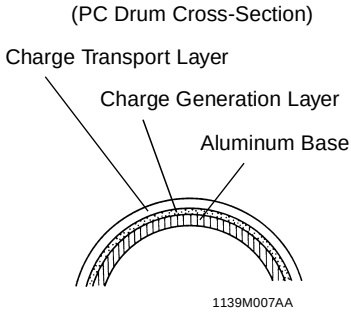
7-2. Identification and Life of I/C

- When the Start key is pressed or the Side Cover is opened and closed, the copier determines whether the I/C is new or one which has been used previously.
- The copier monitors the I/C life by storing in memory the period of time during which the PC Drum has turned. The data is cleared when a new I/C is installed in the copier.

8. PC DRUM

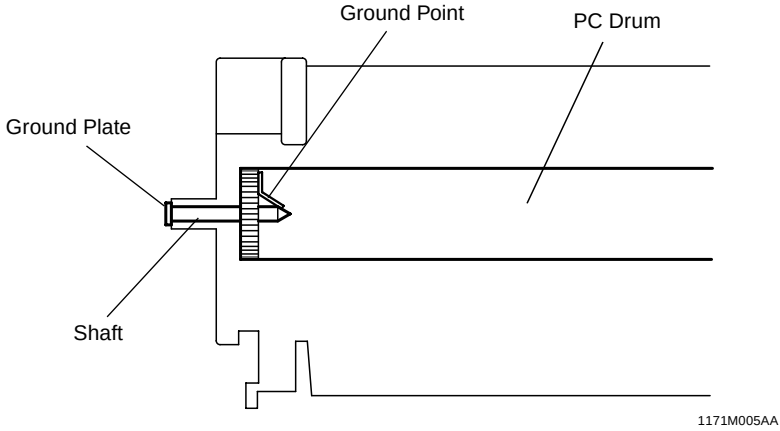
- The PC Drum consists of an aluminum base coated with a charge generation layer and a charge transport layer.





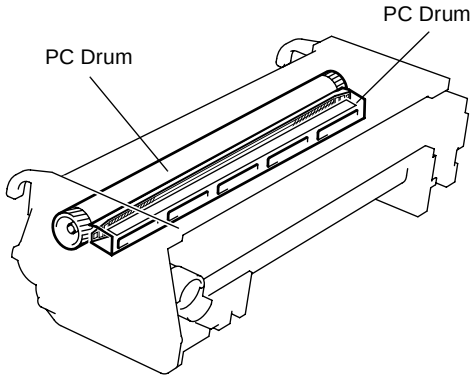
8-1. Grounding of the PC Drum

- The potential of the areas on the surface of the PC Drum exposed to the laser light is grounded to the frame.



9. DRUM CHARGING

- The PC Drum Charge Corona has a grid mesh to deposit a charge evenly across the surface of the PC Drum.
- The corona unit has a comb electrode that discharges only toward the grid mesh, thus minimizing the amount of ozone produced.



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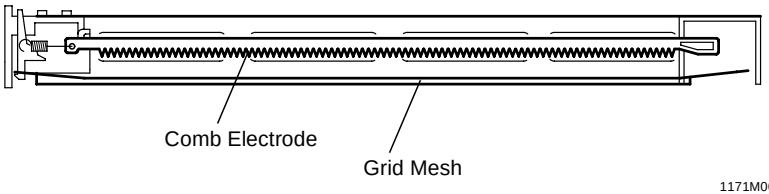

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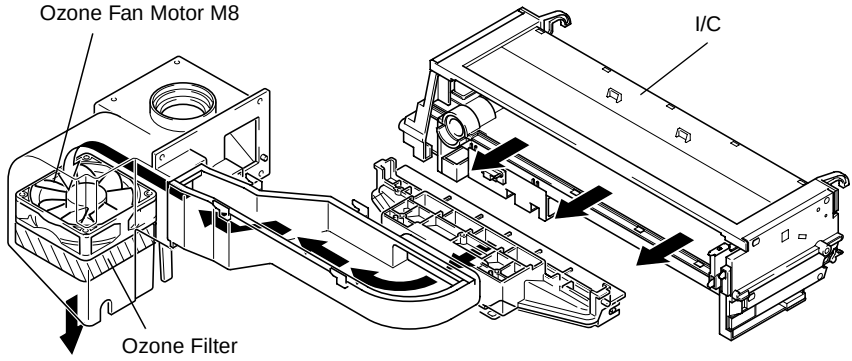
Electrical Component	Control Signal	ON	OFF	Wiring Diagram
Drum charging output	PJ15A-4A	L	H	6-E

(1) Ozone Fan

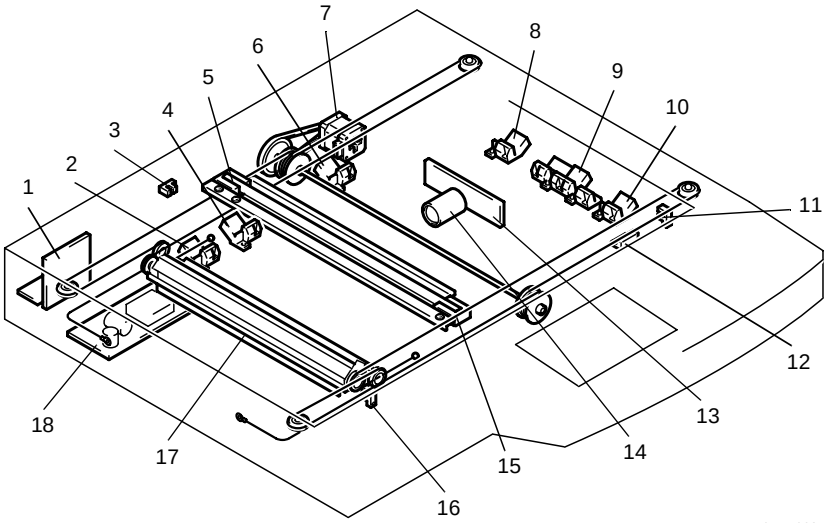
- Ozone produced by the PC Drum Charge Corona is absorbed from the air, which is being drawn out of the copier by the Ozone Fan Motor, by the ozone filter located beneath the motor.



Electrical Component	Control Signal	ON	OFF	Wiring Diagram
M8	PJ10A-4	H	L	8-F

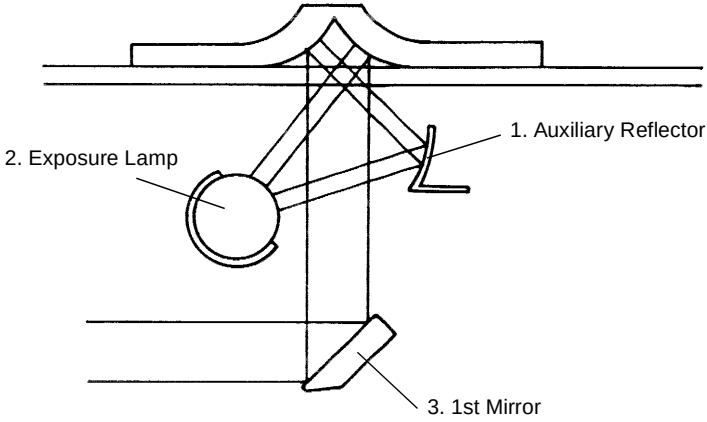
10. IR SECTION

- The surface of the original is exposed to a light and the light reflected off the original is converted to an electrical signal.
- The electrical image signal is then output to the MFB2 Board.



1. BCR Board BCR
2. Original Size Detecting Sensor 5 UN7
3. Original Cover Detecting Sensor PC14
4. Original Size Detecting Sensor 4 UN6
5. Exposure Lamp LA2
6. Original Size Detecting Sensor 6 UN8
7. Scanner Motor M10
8. Original Size Detecting Sensor 1 UN3
9. Original Size Detecting Sensor 2 UN4
10. Original Size Detecting Sensor 3 UN5
11. Scanner Home Position Sensor 1 PC12
12. Size Reset Switch S6
13. CCD2 Board CCD2
14. Lens
15. Scanner
16. Scanner Home Position Sensor 2 PC13
17. 2nd/3rd Mirrors Carriage
18. Inverter Board 1 INV

10-1. Construction of the Exposure Section

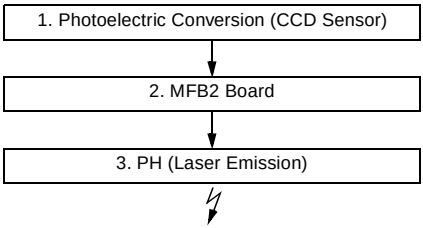


1. Auxiliary Reflector
   When a book or other bound original is copied, the paper in the area near the binding generally fails to come flush against the glass, so that the copy of these areas is generally too dark. The Auxiliary Reflector reduces this problem by reflecting light from the Exposure Lamp onto these areas of the original.
2. Exposure Lamp LA2
   A fluorescent lamp is used to illuminate the original.
3. 1st Mirror
   Directs the light reflected off the original to the 2nd Mirror.

Electrical Component	Control Signal	ON	OFF	Wiring Diagram
LA2	CN13BCR-1	L	H	14-B

10-2. Image Processing Flow

- Image processing consists of the following blocks.



1. Photoelectric Conversion (CCD Sensor)
- Light reflected off the original is received through mirrors and lens by the CCD Sensor which, in turn, outputs the corresponding data to the MFB2 Board.

2. MFB2 Board
- After converting the data received from the CCD to an analog signal, the board converts it to 8-bit image data (A/D conversion). It further makes various corrections.
- Compresses the image data, stores it, and uncompresses it.
- The image memory has a standard capacity of 32MB for the 35-cpm copier and the 25-cpm copier and 16MB for the 20-cpm copier, and can be expanded up to 64MB (optional).

✻ 20-cpm copier: U.S.A. and Canada Only

3. PH
- Emits a laser beam according to the image data provided by the MFB2 Board to expose the surface of the PC Drum.

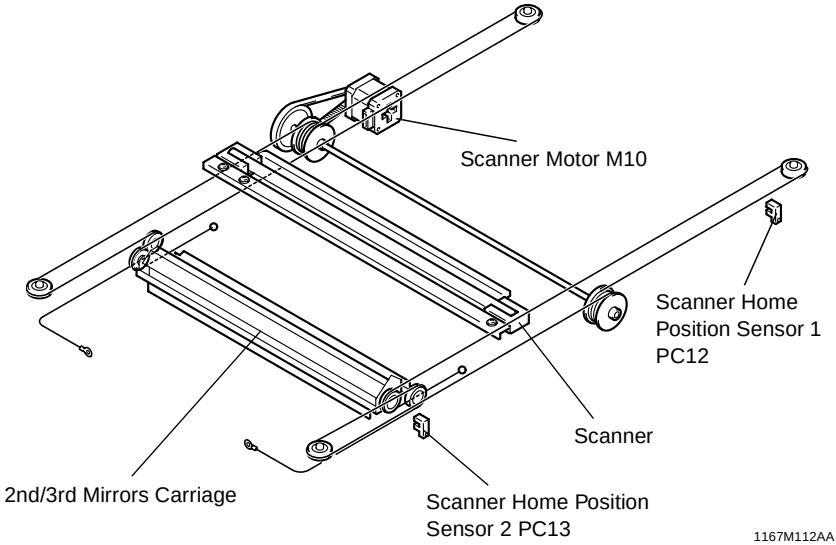
10-3. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

(1) Scanner Moving Mechanism

- The Scanner is driven by the Scanner Motor at a speed according to the set zoom ratio calculated with reference to the speed of the full size mode.
- The Scanner is detected at its home position by Scanner Home Position Sensor 1.
- Scanner Home Position Sensor 2 determines the home position of the Scanner when the AF-9 is used.

(2) 2nd/3rd Mirrors Carriage Moving Mechanism

- The 2nd/3rd Mirrors Carriage travels at a speed half that of the Scanner, thereby keeping constant the optical path length between the original and PC Drum.

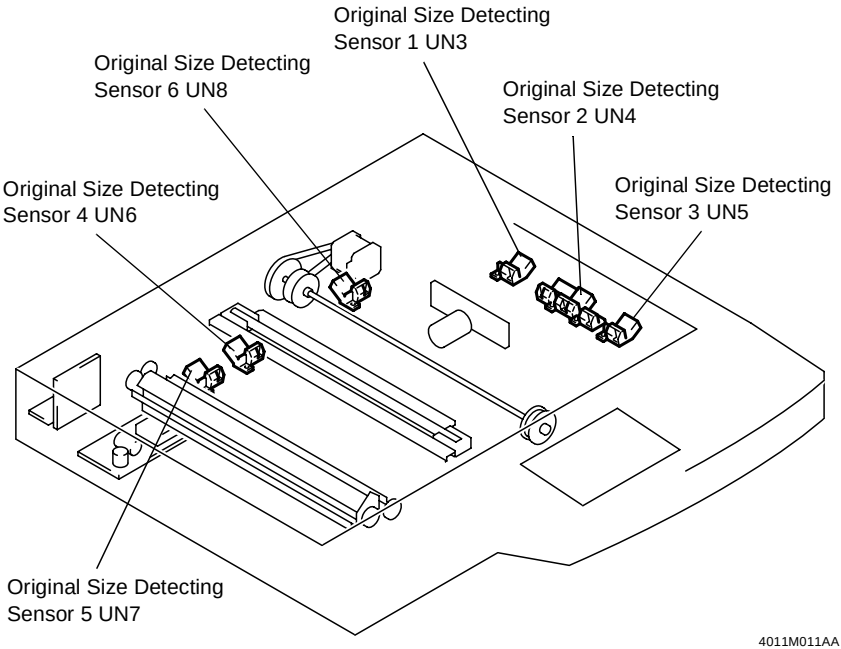


Electrical Component	Control Signal	Forward Rotation	Backward Rotation	Wiring Diagram
M10	CN3BCR-1 to 3	Pulse output		14-C

Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC12	CN11BCR-1	L	H	15-C
PC13	CN12BCR-12	L	H	15-D

11. ORIGINAL SIZE DETECTING SYSTEM

- When the copier is in Auto Paper or Auto Size mode, the Original Size Detecting Sensors mounted at the optical section are used to determine the size of the original.

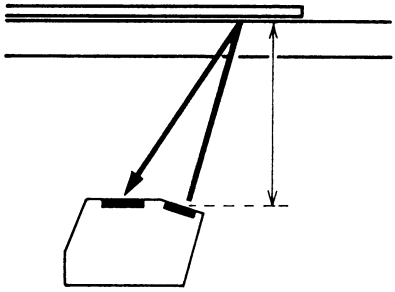


Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
UN3	CN2DSN-4	L	H	17-D
UN4	CN5BCR-7	L	H	14-A
UN5	CN5DSNS-4	L	H	17-E
UN6	CN6BCR-4	L	H	15-B
UN7	CN3DSNS-1	L	H	17-E
UN8 (metric)	CN8BCR-4	L	H	15-C
UN8 (inch)	CN4DSN-4	L	H	15-F

UN3: Optional only for the metric areas; not available for the inch areas
UN5, UN7: Optional
UN8: Optional for the inch areas; standard for the metric areas

11-1. Original Size Detecting Operation

- The copier determines that there is an original placed on the glass when a photo receiver of the original size detecting sensor receives the light of a given level or higher of intensity.



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11-2. Original Size Detection

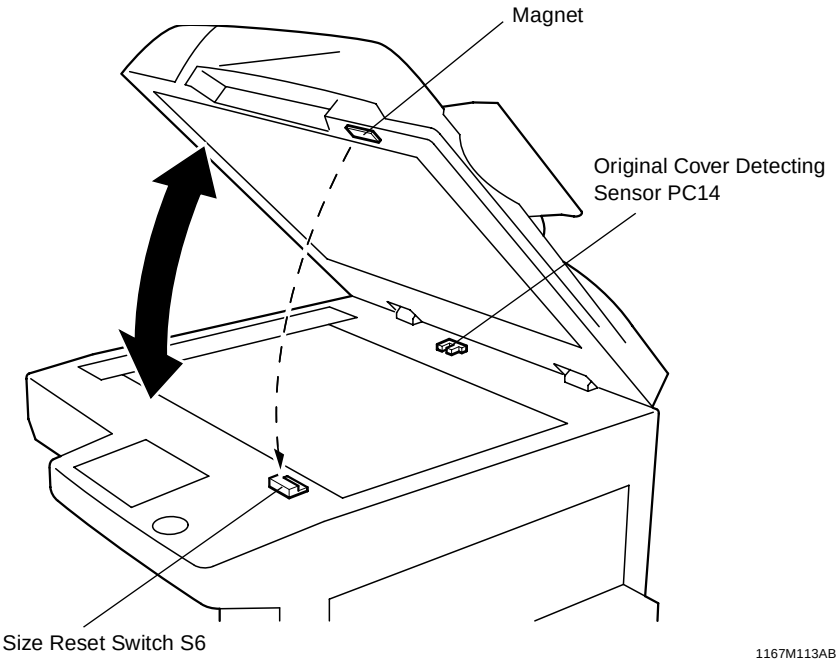
- The copier CPU determines the correct original size based on the combination of statuses of the original, either present or absent, as detected by the original size detecting sensors.

Original Size	UN3	UN4			UN5	UN6	UN7		UN8
	S1	S2	S3	S4	S5	S6	S7	S8	S9
11 × 17	❍	❍	❍	❍		❍	❍	❍	❍
A3L	❍	❍	❍	❍	❍	❍	❍	❍	❍
A4L	❍	❍				❍			❍
A4C	❍	❍	❍	❍	❍				❍
A5L									❍
B4L	❍	❍	❍			❍	❍	❍	❍
B5L	❍								❍
B5C	❍	❍	❍						❍
Letter L	❍	❍							❍
Letter C	❍	❍	❍	❍					❍
Legal	❍	❍				❍	❍	❍	❍

❍: Detected by sensor

11-3. Original Size Detection Timing

- Takes size readings:
  When the Original Cover is raised to an angle of 15° or more (Original Cover Detecting Sensor is unblocked).
- Affirms size readings:
  When the Original Cover is lowered to an angle of 15° or less (Original Cover Detecting Sensor is blocked) and the Size Reset Switch is actuated.
  Or, when the Start key is pressed with the Original Cover Detecting Sensor unblocked.
- Resets size readings:
  When the Original Cover is raised and the Size Reset Switch is just deactuated from the actuated state.

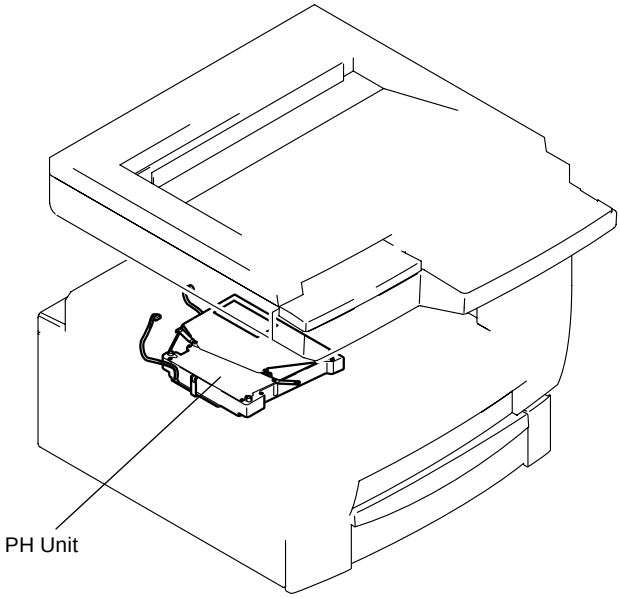


Electrical Component	Control Signal	ON	OFF	Wiring Diagram
S6	CN9BCR-2	L	H	15-D

Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC14	CN10BCR-2	L	H	15-C

12. PH SECTION

- Image data sent from the memory section is corrected and, based on the corrected data, a laser light is projected onto the surface of the PC Drum to form a corresponding latent image.



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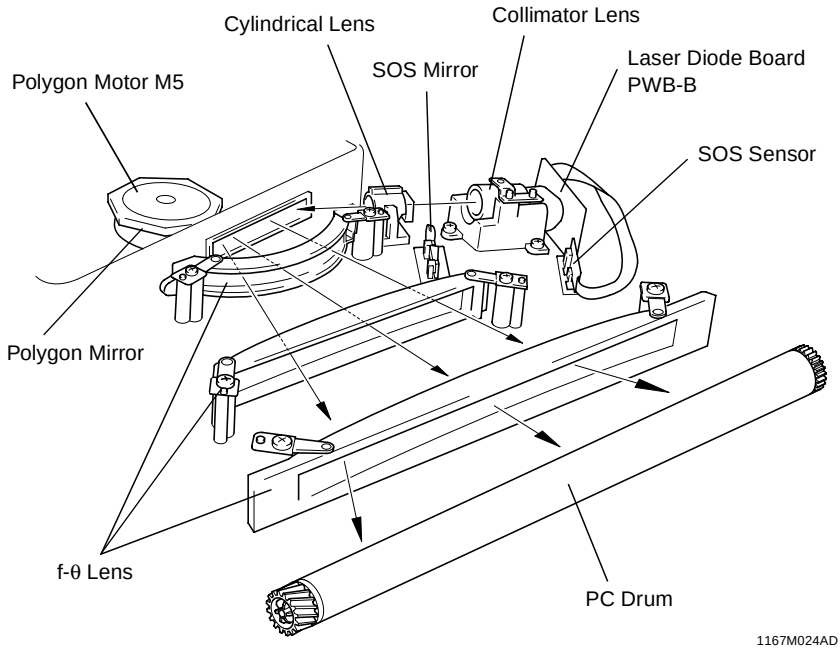
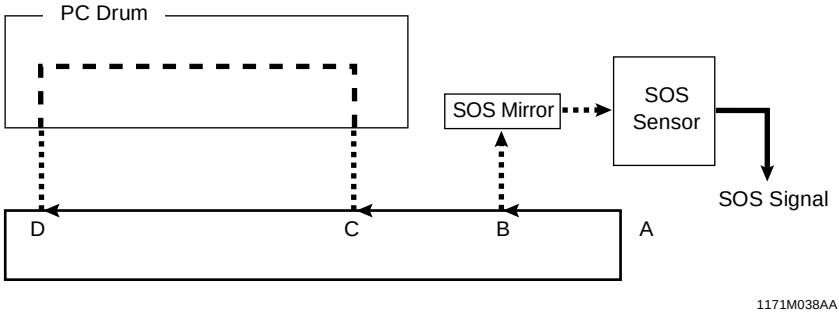
12-1. Laser Emission Timing

- The laser diode is forced to turn ON to project the laser beam onto the SOS Sensor Board, which generates an SOS signal.
- The SOS signal determines the laser emission timing.



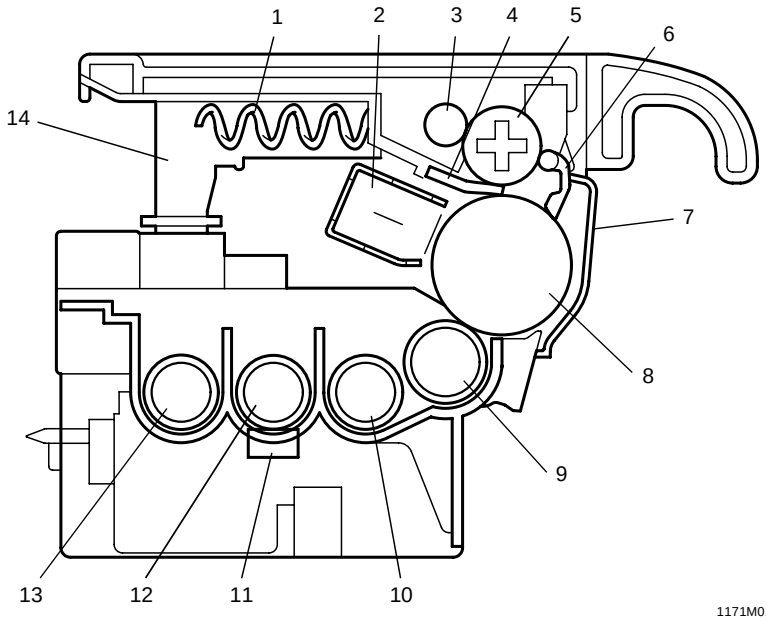


A to B: LD activation
B to C: LD OFF
C to D: Laser beam exposure area according to the image data

Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M5	PJ9A-3	L	H	7-G

13. DEVELOPING UNIT

- The Developing Unit agitates and triboelectrically charges toner so that it sticks to the electrostatic latent image formed on the surface of the PC Drum, then changing the image to a visible, developed one.



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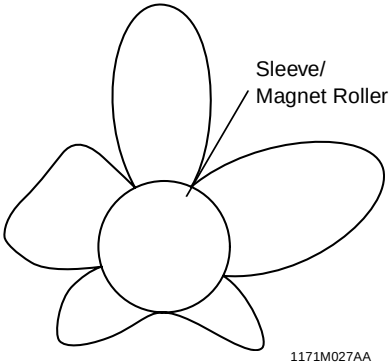
1. Spent Toner Recycling Coil
2. PC Drum Charge Corona
3. Spent Toner Feed Roller 2
4. Cleaning Blade
5. Spent Toner Feed Roller 1
6. PC Drum Paper Separator Finger
7. PC Drum Protective Shutter
8. PC Drum
9. Sleeve/Magnet Roller
10. 1st Toner Conveying Roller
11. ATDC Sensor UN2
12. 2nd Toner Conveying Roller
13. 3rd Toner Conveying Roller
14. Spent Toner Recycling Duct

13-1. Sleeve/Magnet Roller

- The Sleeve/Magnet Roller, which consists of an outer sleeve roller and an inner magnet roller, conveys developer to the point of development.
- The magnetic force of the magnet roller at the point of development is the strongest so that the developer brush stands straight up to deliver the greatest amount of toner to the point of development.



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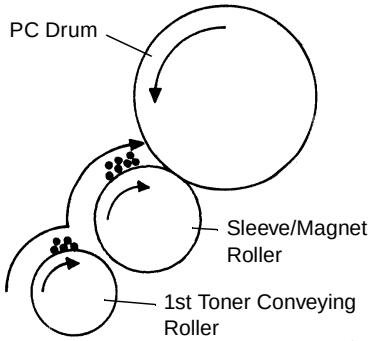

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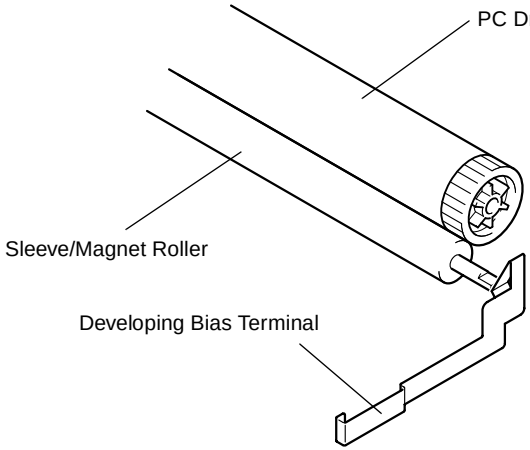
13-2. Developing Bias

- A developing bias voltage (Vb) is applied to the Sleeve/Magnet Roller to prevent toner from sticking to the background of the image.
- The amount of toner attracted onto the surface of the PC Drum depends on how much lower the PC Drum surface potential (Vi) is than Vb (i.e., potential difference).

✻ When the potential difference is large, a greater amount of toner is attracted.
✻ When the potential difference is small, a smaller amount of toner is attracted.



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Electrical Component	Control Signal	ON	OFF	Wiring Diagram
Vb	PJ15A-2A	L	H	6-E

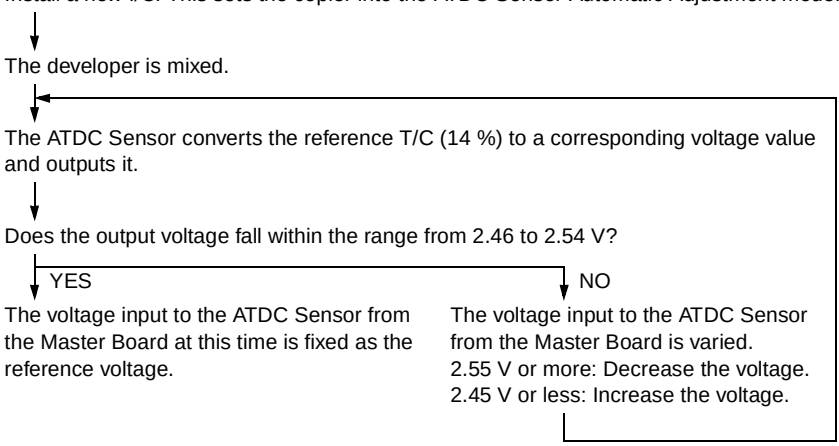
13-3. ATDC Sensor

- The ATDC Sensor detects the toner-to-carrier ratio (T/C) of the developer in the Developer Mixing Chamber.

1. An LED emits infrared rays to toner.
2. There is a phototransistor that converts the intensity of the light reflected off the toner to a corresponding voltage value and outputs it.
3. T/C is determined based on the output voltage value.

(1) ATDC Sensor Automatic Adjustment

- The reference value for the ATDC Sensor is automatically adjusted as detailed below using the ATDC Sensor Automatic Adjustment mode.


Install a new I/C. This sets the copier into the ATDC Sensor Automatic Adjustment mode.
The developer is mixed.
The ATDC Sensor converts the reference T/C (14 %) to a corresponding voltage value and outputs it.
Does the output voltage fall within the range from 2.46 to 2.54 V?
YES
NO
The voltage input to the ATDC Sensor from the Master Board at this time is fixed as the reference voltage.
The voltage input to the ATDC Sensor from the Master Board is varied.
2.55 V or more: Decrease the voltage.
2.45 V or less: Increase the voltage.

(2) Toner Replenishing Control

- While the I/C Motor is turning, the ATDC Sensor samples T/C and, according to the readings, the copier provides the following controls.

T/C (%)	Sampling Data (V)	Control Details
More than 19	Less than 1.41	Defective ATDC Sensor
14 to 19	2.32 to 1.41	Toner replenished for 0 ms.
13 to 14	2.50 to 2.32	Toner replenished for 54 ms at intervals of approx. 1 s.
12 to 13	2.68 to 2.50	Toner replenished for 150 ms at intervals of approx. 1 s.
10 to 12	3.10 to 2.68	Toner replenished for 378 ms at intervals of approx. 500 ms.
7 to 10	3.92 to 3.10	Passed onto the T/C recovery mode.
Less than 7	More than 3.92	Defective ATDC Sensor

✻ Toner replenishment represents the operation of the Sub Hopper Toner Replenishing Motor.

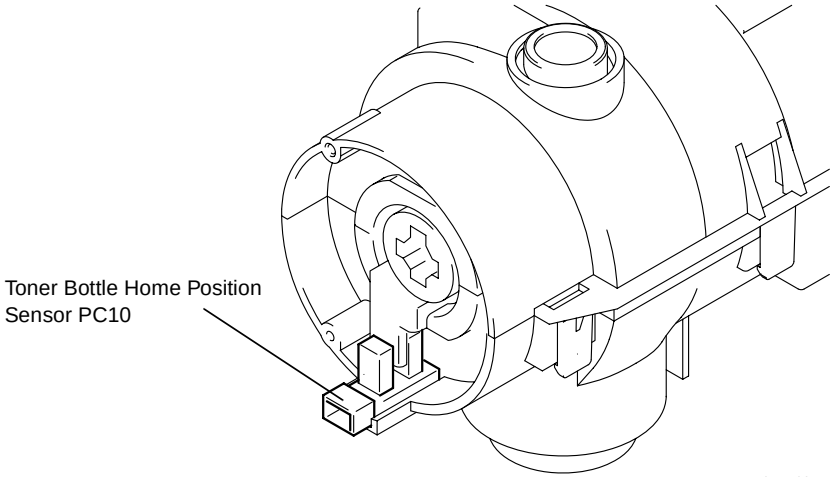
(3) Toner Empty Control (T/C Recovery Mode)

- When control is passed onto the T/C recovery mode, the Sub Hopper Toner Replenishing Motor is energized to replenish the supply of toner into the Developing Unit. If T/C is not recovered to a level of 13 % or higher (2.50 V or less) within a given period of time, a toner-empty condition results.

✻ Given period of time: 35-cpm copier = 150 s; 25/20-cpm copier = approx. 209 s
✻ 20-cpm copier: U.S.A. and Canada Only

13-4. Toner Bottle Home Position Detection Mechanism

- The Toner Bottle Home Position Sensor detects the Toner Bottle at its home position. When the Toner Bottle is at the home position (stationary), its toner supply port should face up.



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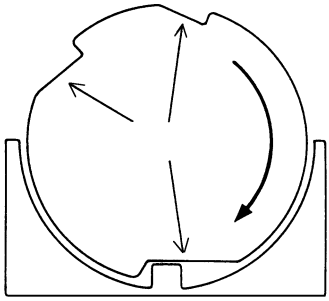
Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC10	PJ15A-4B	L	H	4 to 5-F

13-5. Toner Bottle Vibration Mechanism

- When the dents in the Toner Bottle move past the protrusion of the Bottle Holder, the Toner Bottle is vibrated to prevent some of the toner from remaining unconsumed in the bottle.



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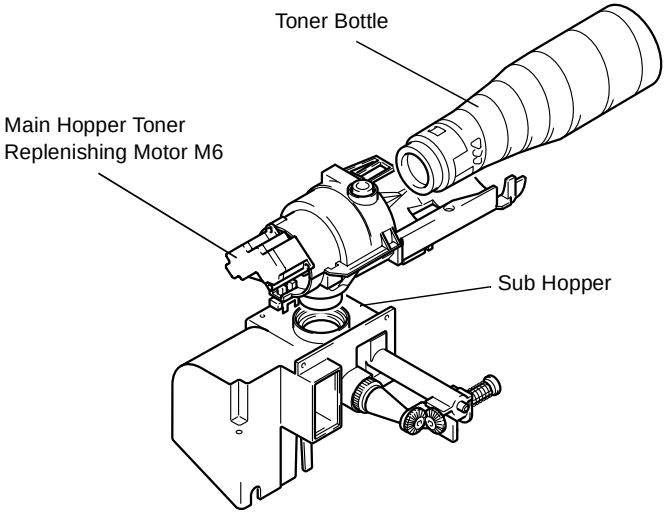
13-6. Main Hopper Toner Replenishing Mechanism

- The Main Hopper Toner Replenishing Motor gives the drive for supplying toner from the Toner Bottle to Sub Hopper.
- Toner is replenished each time the Sub Hopper Toner Empty Switch (S4) provided in the Sub Hopper is actuated and deactuated.



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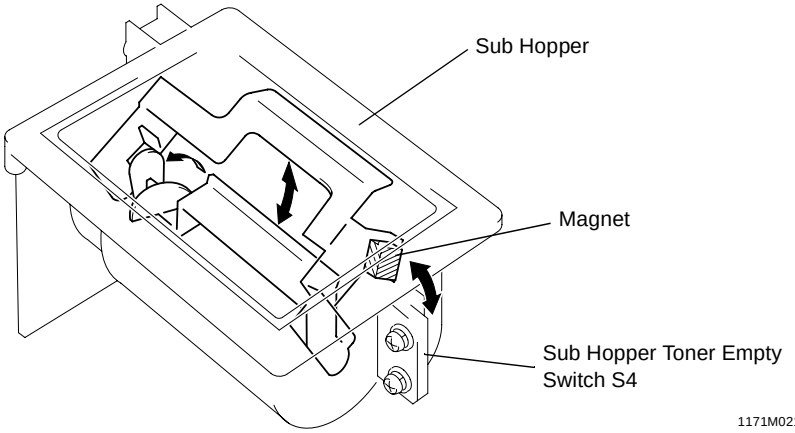

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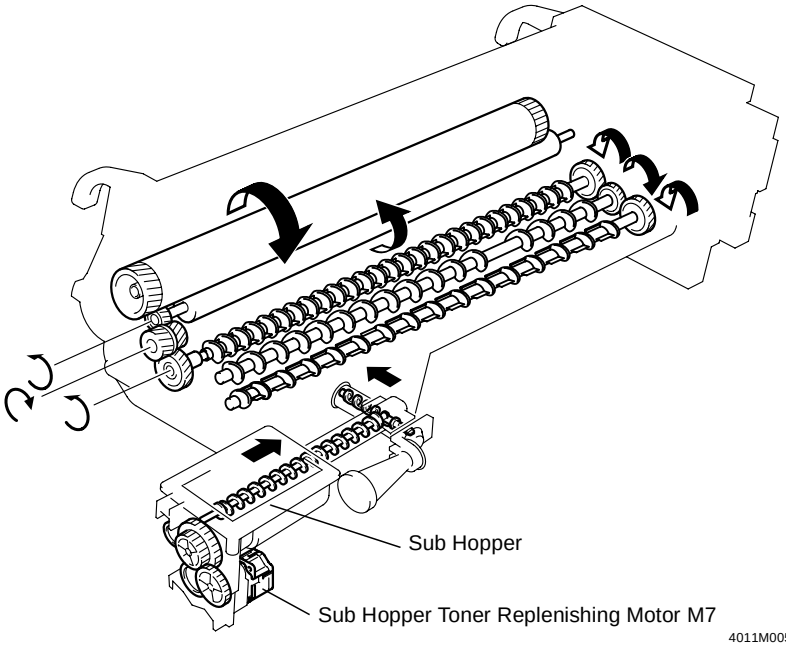
Electrical Component	Control Signal	Energized/ Actuated	Deenergized/ Deactuated	Wiring Diagram
M6	PJ15A-1B	L	H	5-F
S4	PJ3A-15B	L	H	5-H

13-7. Sub Hopper Toner Replenishing Mechanism

- The Sub Hopper Toner Replenishing Motor replenishes toner from the Sub Hopper to the Developer Mixing Chamber.
- The toner replenishing time is determined according to the T/C reading.



Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M7	PJ3A-14A	L	H	6-I

13-8. Sub Hopper Toner Empty Detection Control

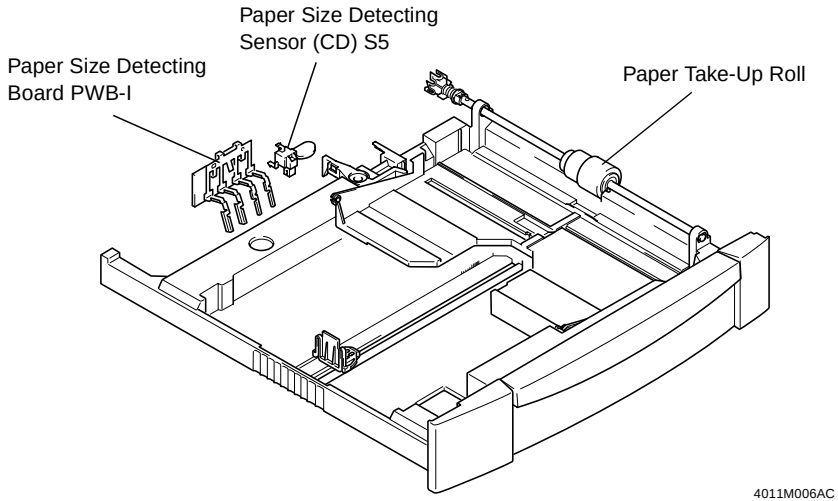
- If T/C is not recovered to a level of 13 % or higher within a given period of time after the copier has entered the T/C recovery mode, a toner-empty condition is detected.

✻ Given period of time: 35-cpm copier = 150 s; 25/20-cpm copier = approx. 209 s

- If T/C drops below 7 % as a result of making additional copies after the toner-empty condition has been detected of the Sub Hopper, a defective ATDC Sensor results and the copier displays the corresponding malfunction code.

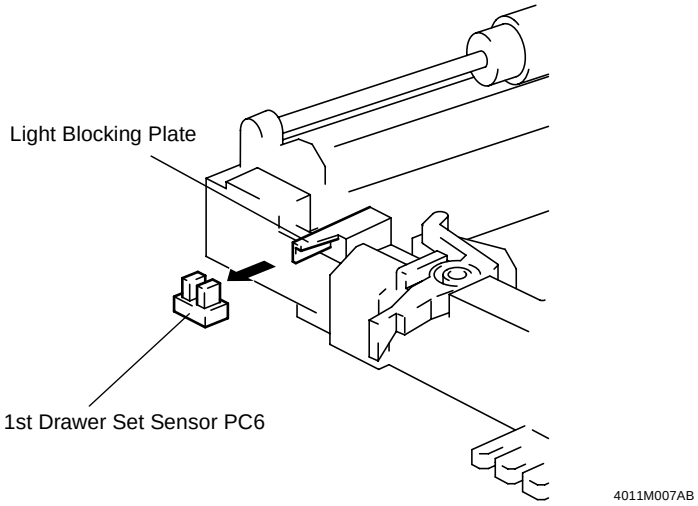
✻ 20-cpm copier: U.S.A. and Canada Only

14. PAPER TAKE-UP/FEED SECTION



14-1. 1st Drawer-in-Position Detection

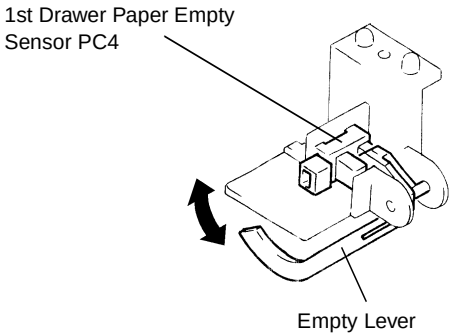
- When the 1st Drawer is slid into the copier, the light blocking plate located in the rear of the drawer blocks the 1st Drawer Set Sensor and the copier determines that the drawer has been slid into position.



Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC6	PJ3A-5B	L	H	6-H

14-2. 1st Drawer Paper Empty Detection

- The 1st Drawer Paper Empty Sensor detects a paper-empty condition.
- When a paper-empty condition is detected (sensor is blocked), the Paper Level LED lights up.



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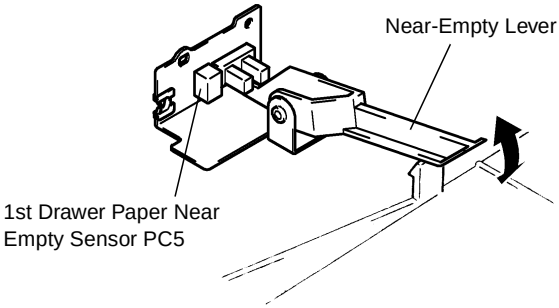
Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC4	PJ15A-14A	L	H	6-E

14-3. 1st Drawer Paper Near-Empty Detection

- The 1st Drawer Paper Near Empty Sensor detects a paper near-empty condition.
- When a paper near-empty condition is detected (sensor is blocked), the Paper Level LED starts blinking. A paper-empty condition results when about 50 more sheets of paper are used after the paper near-empty condition has been detected.



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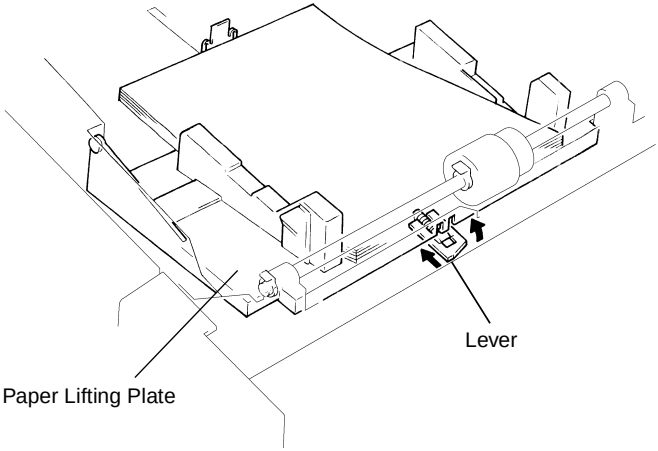
Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC5	PJ3A-2B	L	H	6-H

14-4. 1st Drawer Paper Lifting Plate

- The Paper Lifting Plate installed in the 1st Drawer is spring-loaded to push the paper stack upward.
- When the drawer is slid into the copier, the lever that locks down the Paper Lifting Plate is pushed and unlocked, allowing the Paper Lifting Plate to push the paper stack upward.



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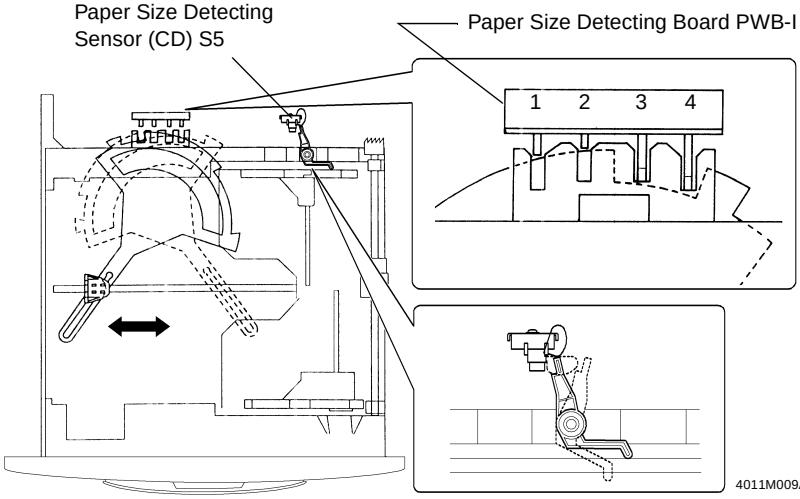
14-5. 1st Drawer Paper Size Detection

- The Paper Size Detecting Board detects the length of the paper (FD), while the Paper Size Detecting Sensor (CD) detects the width of the paper (CD).
- A lever is connected to the Trailing Edge Stop of the 1st Drawer, while another lever is connected to the Edge Guide of the drawer. These levers activate and deactivate the Paper Size Detecting Sensor (CD), and the switches on the Paper Size Detecting Board. The combination of ON or OFF, or activated or deactivated, condition of each switch and sensor determines the paper size.



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(1) Paper Size Table According to Sensor/Switch Conditions

Paper Size Detecting Board PWB-I				S5	Paper Size
1	2	3	4		
H	L	L	L	L	A3L
L	L	L	L	L	11 × 14 L
L	L	L	L	H	B4C, Folio, Legal L
L	L	L	H	H	FLS, G. Legal L
L	H	H	H	H	A4C
H	H	H	H	H	B5L, Letter L, G. Letter L, Executive L, 8 × 10 L
H	H	H	L	L	Letter C
H	H	H	L	H	Invoice L
H	H	L	L	L	A4C, G. Letter C, 8 × 10 C
H	H	L	L	H	A5L
H	L	L	H	H	B5C, B6L, Executive C
L	H	L	L	H	A5C, A6L, Invoice C

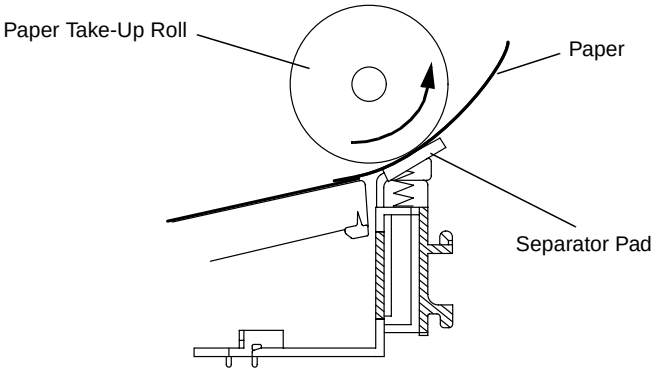
Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PWB-I (1)	PJ15A-6B	L	H	6-F
PWB-I (2)	PJ15A-7B	L	H	6-F
PWB-I (3)	PJ15A-8B	L	H	6-F
PWB-I (4)	PJ15A-9B	L	H	6-F
S5	PJ3A-8B	L	H	6-H

14-6. Drawer Paper Take-Up Mechanism

(1) Paper Separating Mechanism

- The coefficient of friction between the Paper Take-Up Roll and Separator Pad is effectively used to prevent double feed of paper.

When one sheet of paper is taken up	:	The coefficient of friction on the front side of the sheet of paper taken up and fed through the space between the Paper Take-Up Roll and Separator Pad is the same as that on the backside of the sheet of paper, allowing the paper to be properly fed into the copier.
When two or more sheets of paper are taken up	:	The coefficient of friction between the paper and the Separator Pad is greater than that between the sheets of paper, which allows only the top sheet of paper to be fed into the copier.



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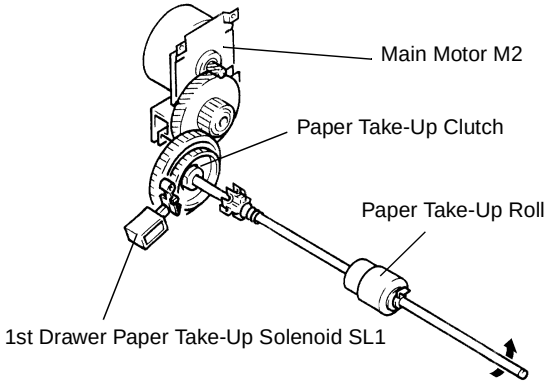
14-7. Drawer Paper Take-Up Control

(1) Paper Take-Up Roll

- Drive from the Main Motor is transmitted via a gear train to the Paper Take-Up Clutch (spring clutch). The Paper Take-Up Roll is turned when the 1st Drawer Paper Take-Up Solenoid is then energized.



Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
SL1	PJ3A-13B	L	H	5-H

(2) Paper Take-Up Retry Control

- To minimize the occurrence of a paper misfeed, the paper take-up sequence is temporarily halted and a paper take-up retry sequence is initiated if the sheet of paper does not reach the Synchronizing Roller Sensor within a given period of time after the paper take-up sequence has been started. This sequence is repeated a given number of times.

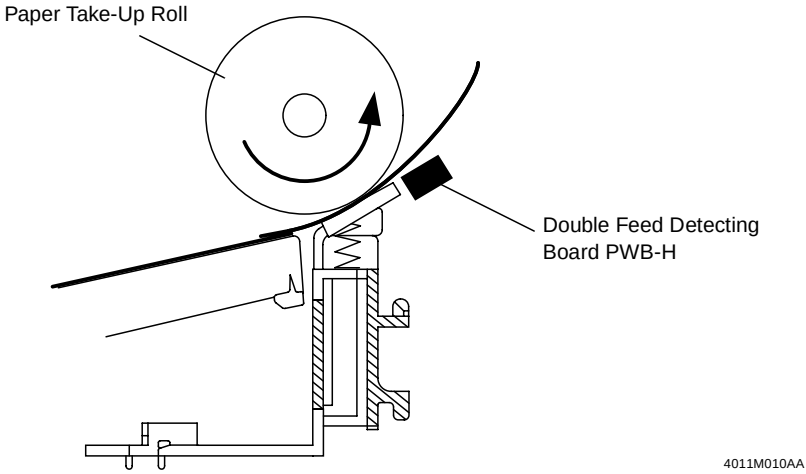
	Given No. of Paper Take-Up Retry Sequences
Paper Take-Up Retry	2

(3) Paper Take-Up Interval Control

- To minimize the occurrence of a paper misfeed due to improper paper separation, the interval between two paper take-up sequences is automatically varied according to the type and size of paper being used.

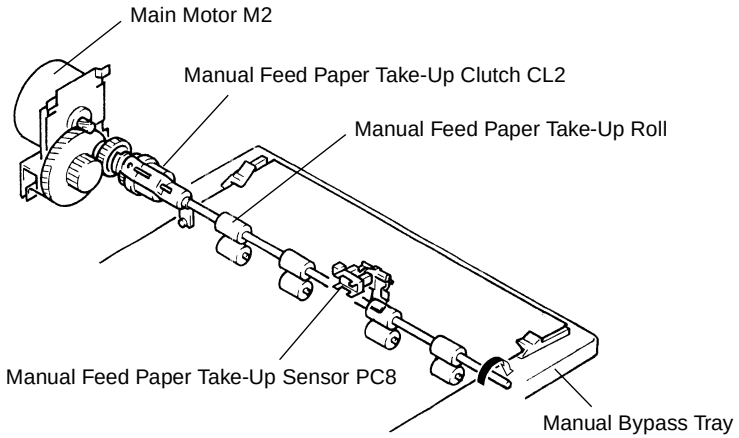
(4) Double Feed Paper Take-Up Control (35-cpm copier only)

- The following control is provided to minimize the occurrence of a paper misfeed due to double feed. If the Double Feed Detecting Board detects a sheet of paper, the copier retards the start of paper take-up sequence for the subsequent sheet of paper a period of time equivalent to about 10 mm.



Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PWB-H	PJ4A-2	L	H	6-G

15. MANUAL BYPASS TRAY


Main Motor M2
Manual Feed Paper Take-Up Clutch CL2
Manual Feed Paper Take-Up Roll
Manual Feed Paper Take-Up Sensor PC8
Manual Bypass Tray

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15-1. Manual Bypass Paper Take-Up Control

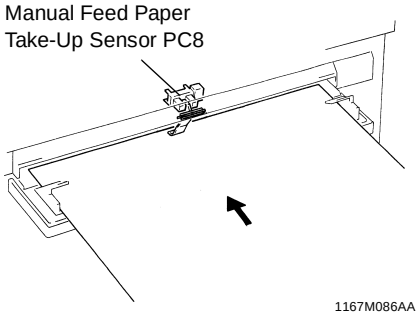
- Drive from the Main Motor is transmitted via a gear train to the Manual Feed Paper Take-Up Roll when the Manual Feed Paper Take-Up Clutch is energized.

Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
CL2	PJ2A-9A	L	H	4-I

15-2. Manual Bypass Paper Empty Detection

- The Manual Feed Paper Take-Up Sensor is used for detecting a paper-empty condition of the Manual Bypass Tray.

When Paper is Present



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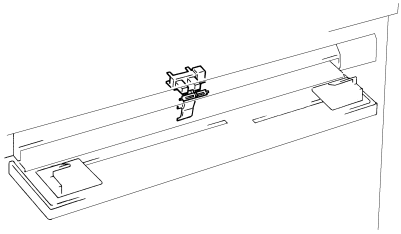
When Paper is not Present



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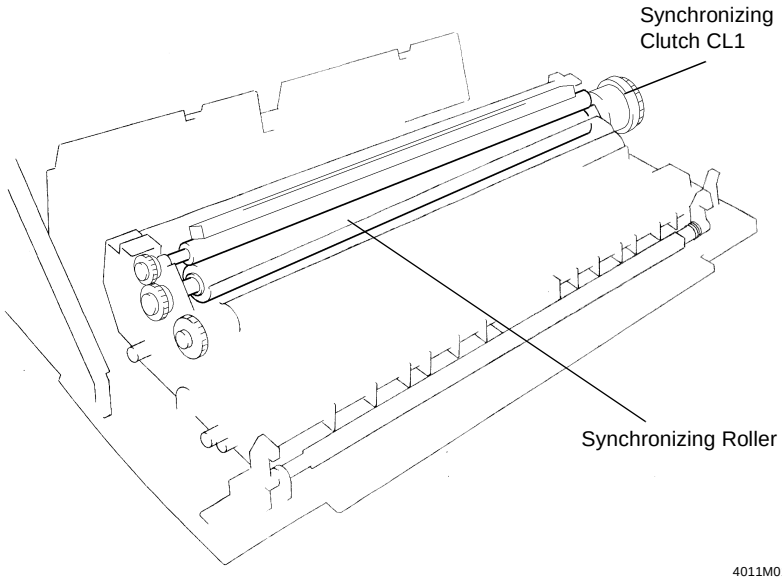
Electrical Component	Control Signal	Activated	Deactivated	Wiring Diagram
PC8	PJ2A-7B	L	H	4-H

16. SYNCHRONIZING ROLLERS

- The Synchronizing Rollers synchronize the timing of the exposure section (PH) with that of the paper transport section.



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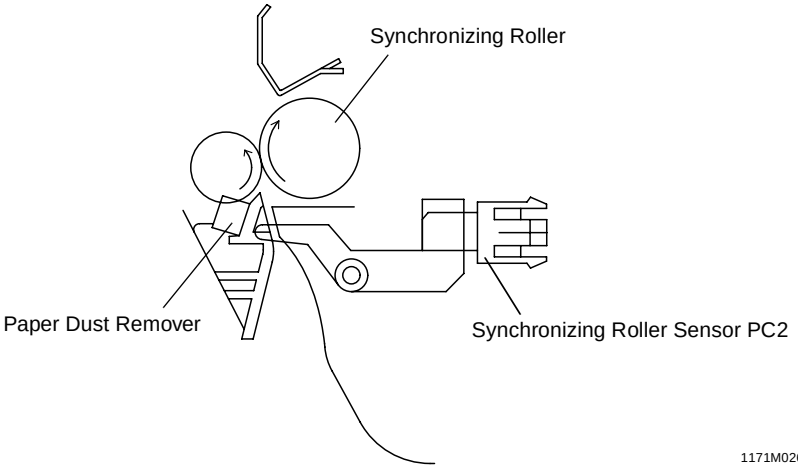
16-1. Paper Dust Remover

- Paper dust attracted from the paper to the surface of the Synchronizing Roller is transferred onto the Paper Dust Remover.



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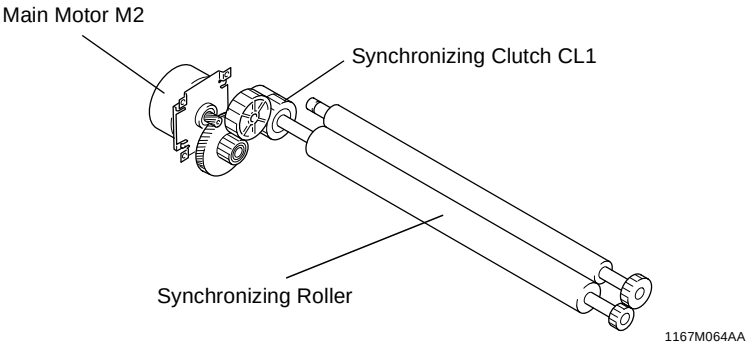
16-2. Synchronizing Roller Drive Mechanism

- Drive for the Synchronizing Rollers is provided by the Main Motor through the Synchronizing Clutch.



Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
CL1	PJ3A-2A	L	H	5-I

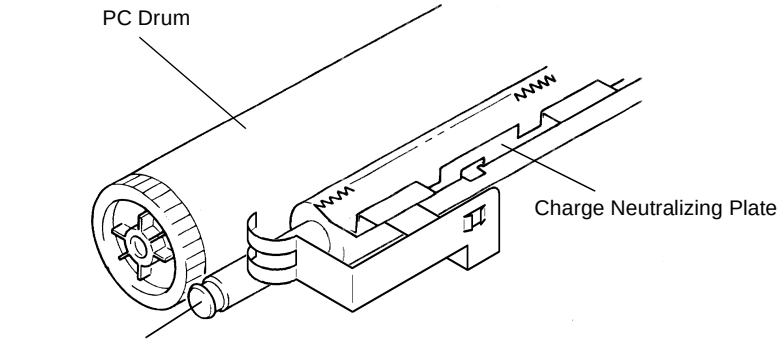
17. IMAGE TRANSFER AND PAPER SEPARATION

Image Transfer

- A charge is applied to the Image Transfer Roller to transfer the toner image formed on the surface of the PC Drum onto the paper.
- To ensure that image transfer efficiency is stabilized, the image transfer current is automatically varied according to the paper size, paper type, and the B/W ratio of the original.
- To prevent toner from sticking to the Image Transfer Roller, a negative image transfer voltage is applied to the roller.

Paper Separation

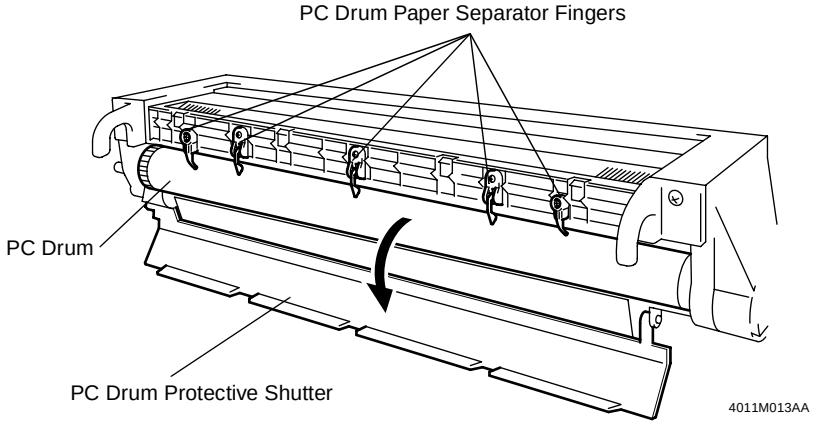
- To neutralize any charge left on the paper, to which the image has been transferred, a negative voltage is applied to the Charge Neutralizing Plate.



Electrical Component	Control Signal	ON	OFF	Wiring Diagram
Image Transfer Output	PJ15A-5/6A	L	H	6-E

17-1. PC Drum Paper Separator Fingers

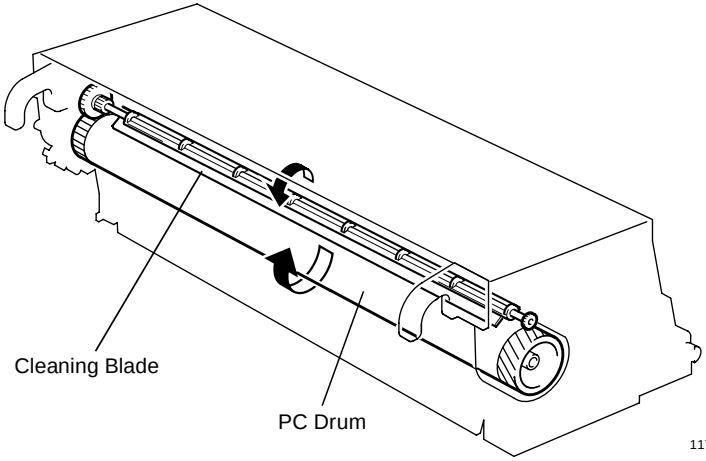
- The PC Drum Paper Separator Fingers mechanically separate paper from the surface of the PC Drum to ensure good and positive paper separation.



18. PC DRUM CLEANING

- The Cleaning Blade is used to scrape residual toner off the surface of the PC Drum.
- The spent toner is conveyed by Spent Toner Feed Rollers 1 and 2 to the Recycling Duct and eventually back to the Developer Mixing Chamber.
- To prevent paper dust from being compacted on the edge of the Cleaning Blade, the PC Drum is turned backward as soon as a copy cycle is completed if the drum has been driven for more than a given period of time.

✻ Given period of time: 35-cpm copier = 170 s; 25/20-cpm copier = 240 s
✻ 20-cpm copier: U.S.A. and Canada Only



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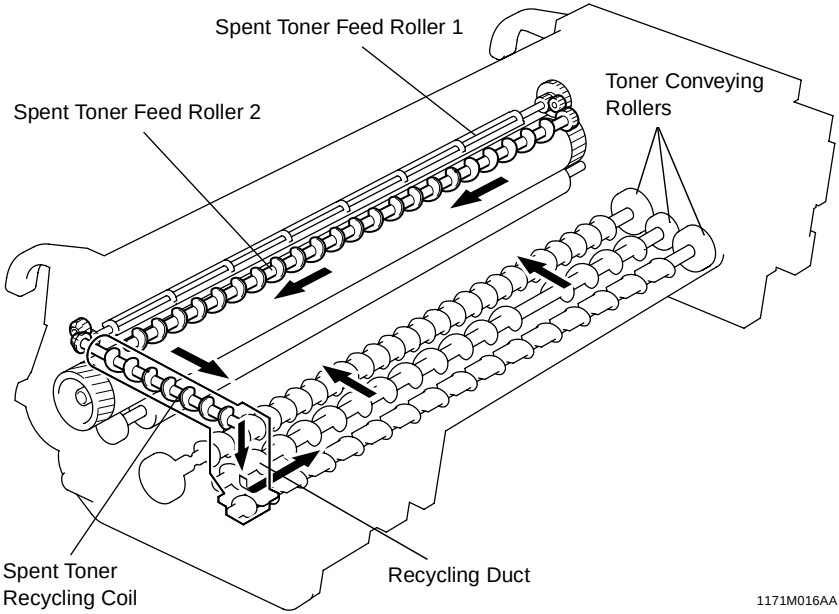

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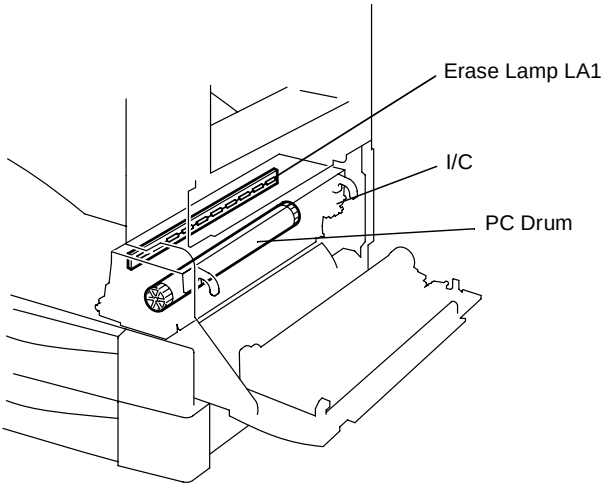
19. ERASE LAMP

- Any potential remaining on the surface of the PC Drum is neutralized by both light from the Erase Lamp and a negative voltage applied by the Charge Neutralizing Sheet.
- The Charge Neutralizing Sheet applies a negative charge on the surface of the PC Drum which is positively charged by the Image Transfer Roller. The Erase Lamp then illuminates the surface of the PC Drum to further neutralize it.



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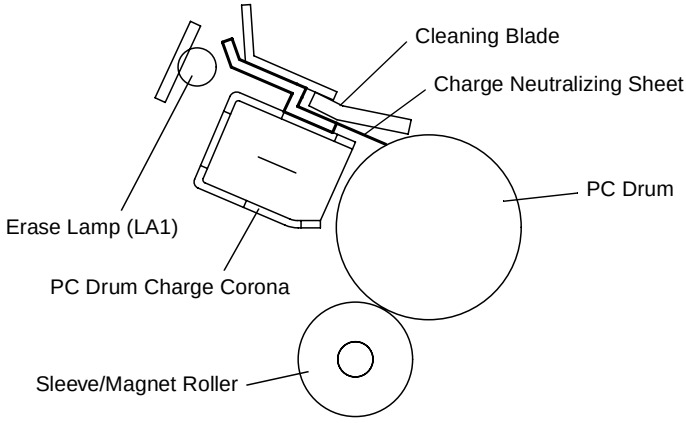

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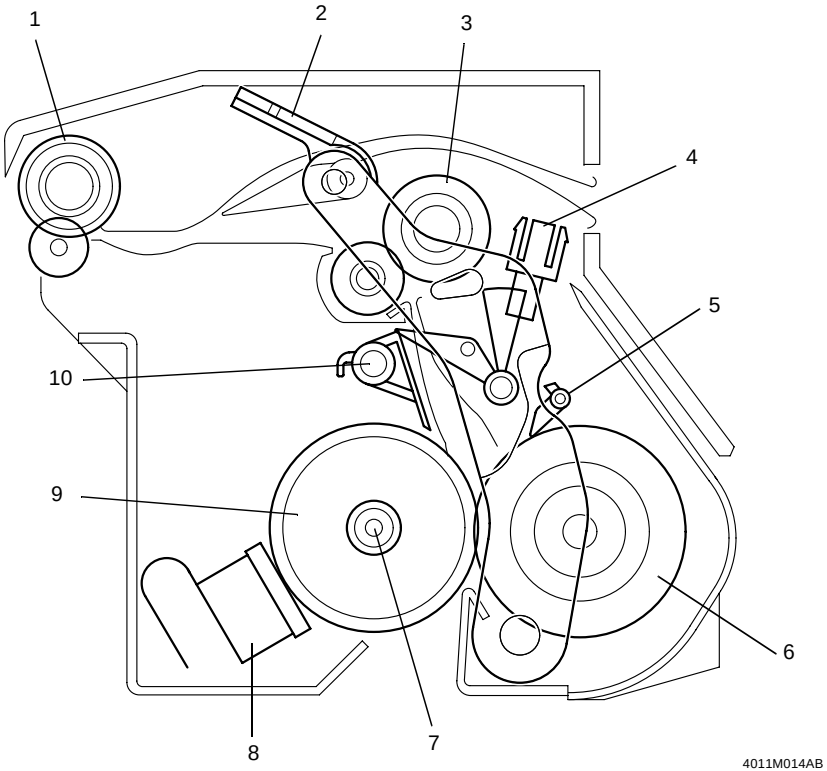
Electrical Component	Control Signal	All lamps ON	Standby ON	Wiring Diagram
LA1	PJ10A-7	L	H	8-F

20. FUSING UNIT

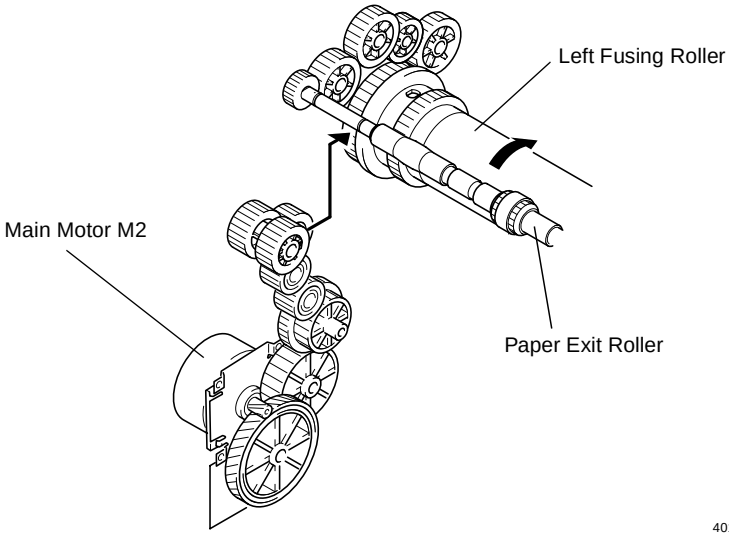
- The heat and pressure applied by the Fusing Rollers to the paper fixes the image permanently to the paper.



1. Paper Exit Roller
2. Fusing Unit Pressure Lever
3. Fusing Transport Roller
4. Paper Exit Sensor PC3
5. Fusing Paper Separator Finger
6. Right Fusing Roller
7. Fusing Roller Heater Lamp H1
8. Left Fusing Roller
9. Fusing Roller Thermostat TS1
10. Fusing Paper Separator Finger

20-1. Fusing Unit Drive Mechanism

- Drive from the Main Motor is transmitted via a gear train to the Left Fusing Roller.

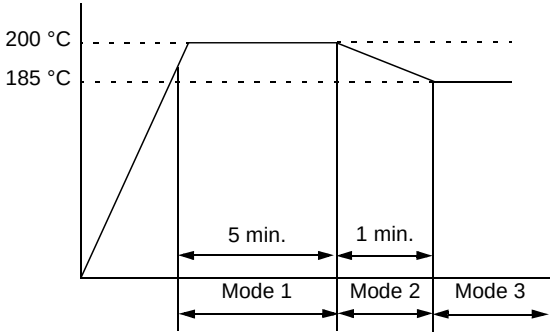


Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M2	PJ5A-1	L	H	4 to 5-F

20-2. Fusing Temperature Control

- The Fusing Roller Heater Lamp is turned ON and OFF so that the surface temperature of the Fusing Roller is maintained at a preset temperature.
- The surface temperature of the Fusing Roller is detected by converting the temperature read by the thermistor to a corresponding electrical signal.
- When the temperature of the Fusing Roller rises to an abnormally high level, power to the Fusing Roller Heater Lamp is shut down.

- Temperature Control During Standby State -



✻ Temperature reached upon completion of warm-up cycle:
35-cpm copier = 190 °C; 25/20-cpm copier = 183 °C
✻ Temperature is increased to 200 °C after the warm-up cycle has been completed.
✻ 20-cpm copier: U.S.A. and Canada Only

(1) Temperature Control Table during Standby State and Copy Cycle

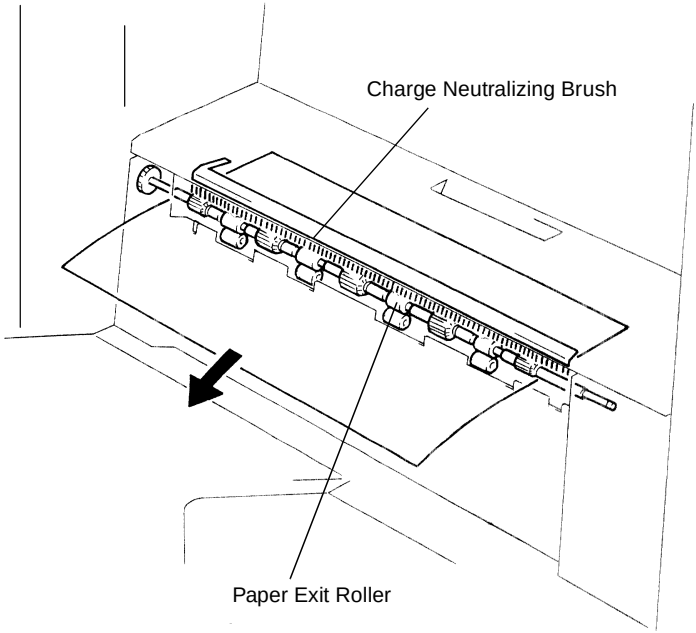
Paper			Mode 1	Mode 2	Mode 3
Standby			200 °C	185 °C	185 °C
Plain paper (width 251 mm or more)	1-sided	35-cpm copier	190 °C	170 °C	170 °C
		25/20-cpm copier	183 °C	170 °C	170 °C
Plain paper (width 250 mm or less)		35-cpm copier	185 °C	170 °C	170 °C
		25/20-cpm copier	183 °C	160 °C	160 °C
2-sided mode			200 °C	180 °C	180 °C
Special paper			210 °C	200 °C	200 °C
OHP transparencies			155 °C	155 °C	155 °C

20-3. CPM Control

- If special paper of a small size (width of 250 mm or less) is used to run a multi-copy cycle, the temperature on the edges of the Fusing Rollers (over which no part of the paper passes) tends to run high, which can damage the copier. To prevent this, the paper feed interval is made greater.
- CPM control is activated when the number of copies made on special paper of the small size, as counted with an internal counter, exceeds 30.
- If no special paper of the small size is fed through the copier for a period of 2 min. or more, the counter is cleared, canceling CPM control.

21. PAPER EXIT UNIT

- The paper exit unit feeds the paper, which has been transported from the Fusing Unit, out of the copier.
- The Charge Neutralizing Brush touches the surface of the sheet of paper being fed out to neutralize any static charge left on it.



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22. OTHER UNITS AND MECHANISMS

22-1. Memory Backup

- IC3 mounted on the Master Board (PWB-A) stores the values set and adjusted with the Tech. Rep. Mode and other functions, as well as counter values. When replacing PWB-A, therefore, it is necessary to remount IC3.

NOTE

- *When replacing PWB-A (Master Board), care should be used not to change IC3 together with the board.*

✻ For details, see DIS/REASSEMBLY, ADJUSTMENT.

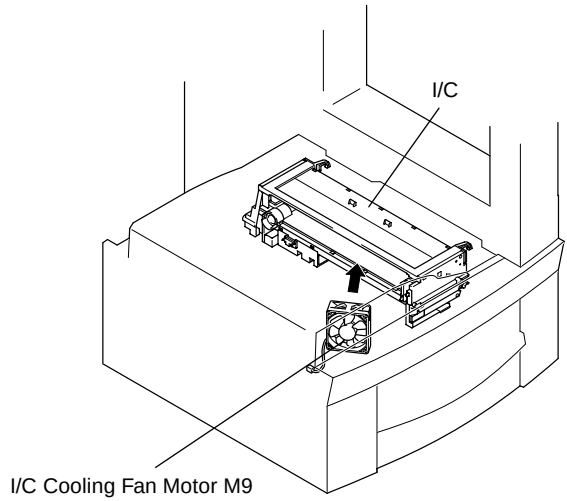
22-2. Flash Memory

- To respond to the need of upgrading software, data is written in flash memory using the controller.

22-3. Interior Cooling Mechanism

(1) I/C Cooling Mechanism

- A fan motor is used to blow outside air against the I/C, thereby preventing low ID and a foggy background from occurring due to an increased temperature of the developer.



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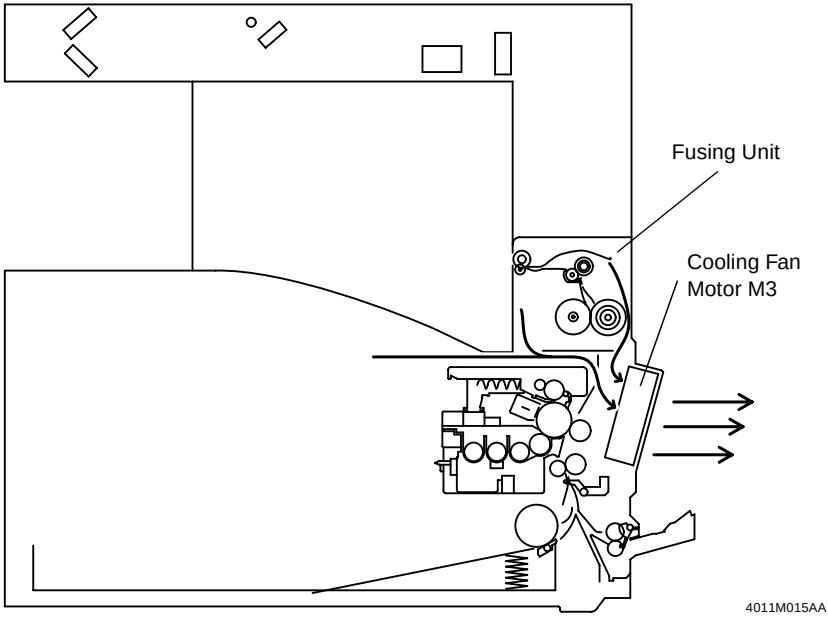
Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M9	PJ15A-13B	L	H	6-F

(2) Fusing Section Cooling Mechanism

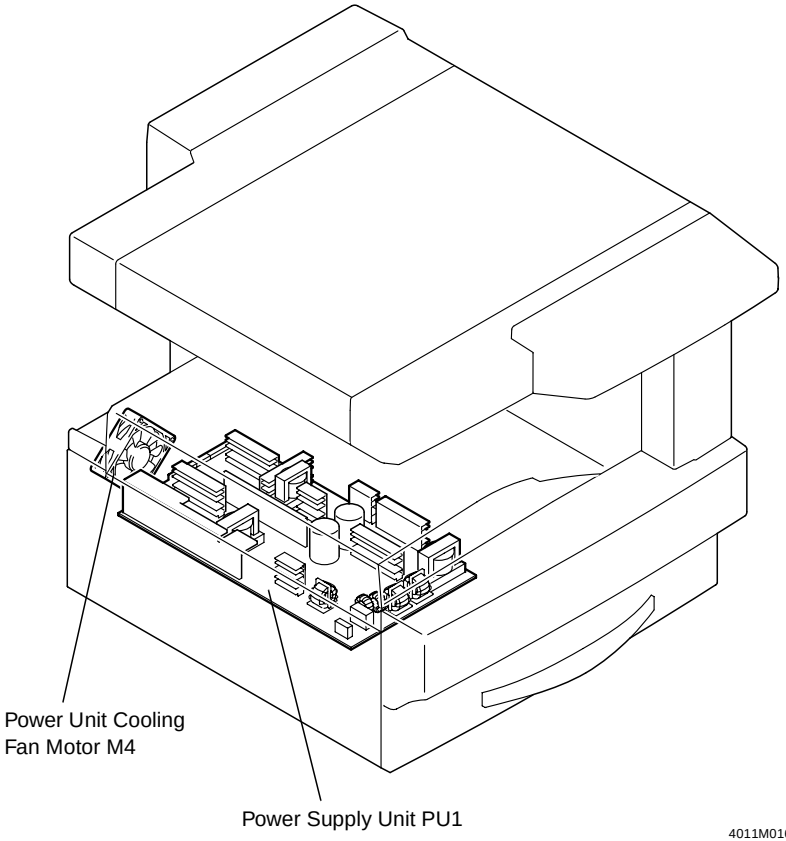
- A fan motor draws air from the area around the Fusing Unit to the outside to prevent the copier interior temperature from running high.



Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M3	PJ3A-3A	L	H	5-I

(3) Power Supply Section Cooling Mechanism

- A fan motor draws air from the area around the Power Supply Unit to the outside to prevent the temperature of the unit from running high.



Electrical Component	Control Signal	Energized	Deenergized	Wiring Diagram
M4	PJ10A-1	L	H	8-F

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MINOLTA ME GmbH

4011-7990-11

Di251 / Di351

SERVICE MANUAL

[FIELD SERVICE]

MINOLTA

4011-7991-11

Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

✻ Depending on the model, some of the precautions given in the following do not apply.

WARNING

1. Always observe precautions.
    - Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
    - Be sure to observe the “Safety Information” given in the Operator’s Manual.

2. Before starting the procedures, be sure to unplug the power cord.
    - This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
    - The product also contains parts that can jerk suddenly and cause injury.
    - If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.
    - For replacement parts, always use the genuine parts specified in the manufacturer’s parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
    - Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer’s parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.
    - Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
    - Do not use a multiple outlet to which any other appliance or machine is connected.
    - Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.
    - A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.
    - Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.
    - A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
    - Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)
    - Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
    - Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.
    - Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.
    - To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
    - To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

CAUTION

1. Precautions for Service Jobs
    - A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
    - When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
    - Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
    - When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed
    - Wherever feasible, keep all parts and covers mounted when energizing the product.
    - If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
    - Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
    - Never use a flammable spray near the product. This could result in a fire.
    - Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
    - Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

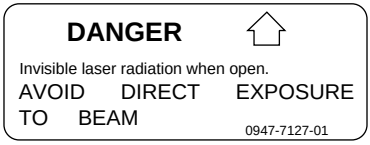
3. Precautions for the Working Environment
    - The product must be placed on a flat, level surface that is stable and secure.
    - Never place this product or its parts on an unsteady or tilting workbench when servicing.
    - Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
    - Avoid dusty locations and places exposed to oil or steam.
    - Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries (Lithium, Nickel-Cadmium, etc.)
    - Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
    - Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
    - Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)
    - Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
    - If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
    - Make sure that no one enters the room when the machine is in this condition.
    - When handling the laser unit, observe the “Precautions for Handling Laser Equipment.”

注意- ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

1167P001AA



1144D270AA

Other Precautions

- When handling circuit boards, observe the “HANDLING of PWBs”.
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.

Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

Precautions for Service

When performing inspection and service procedures, observe the following precautions to prevent mishandling of the machine and its parts.
✻ Depending on the model, some of the precautions given in the following do not apply.

Precautions Before Service

- When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
- Never disturb the LAN by breaking or making a network connection, altering termination, installing or removing networking hardware or software, or shutting down networked devices without the knowledge and express permission of the network administrator or the shop supervisor.

How to Use this Book

1. DIS/REASSEMBLY, ADJUSTMENT
- To reassemble the product, reverse the order of disassembly unless otherwise specified.

2. TROUBLESHOOTING
- If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
- All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
- The procedures preclude possible malfunctions due to noise and other external causes.

Precautions for Service

- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.
- Do not use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.

Precautions for Dis/Reassembly

- Be sure to unplug the copier from the outlet before attempting to service the copier.
- The basic rule is not to operate the copier anytime during disassembly. If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the timing belt and gears.
- Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
- Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- Never use flammable sprays near the copier.
- A used battery should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.
- When reassembling parts, make sure that the correct screws (size, type) and toothed washer are used in the correct places.
- If it becomes necessary to replace the thermal fuse or any other fuse mounted on a board, be sure to use one of the rating marked on the blown fuse. Always note the rating marked on the fuse, as the rating and mounting site or number used are subject to change without notice.

Precautions for Circuit Inspection

- Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
- When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the GND wire.

Handling of PWBs

1. During Transportation/Storage:

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight and high temperature.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.
- Protect the PWBs from any external force so that they are not bent or damaged.

2. During Inspection/Replacement:

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch a metal part to discharge static electricity before touching the PWB.
- Note that replacement of a PWB may call for readjustments or resetting of particular items.

Handling of Other Parts

- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.

Handling of the PC Drum

✻ Only for Products Not Employing an Imaging Cartridge.

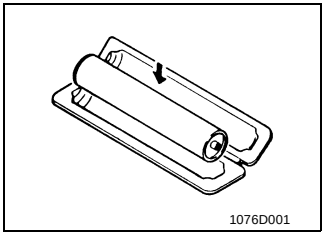
1. During Transportation/Storage:

- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the PC Drum in a car for a long time.

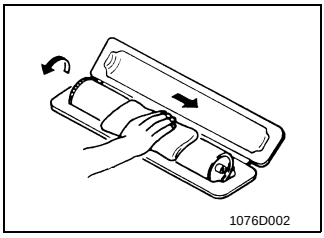
2. Handling:

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its carton or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.



1. Place the PC Drum into one half of its carton.

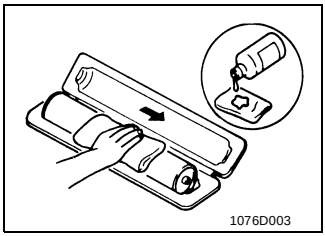


2. Gently wipe the residual toner off the surface of the PC Drum with a dry, Dust-Free Cotton Pad.

A. Turn the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.

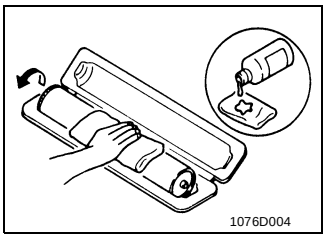
B. Turn the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the Dust-Free Cotton Pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

✻ At this time, always use a CLEAN face of the dry Dust-Free Cotton Pad until no toner is evident on the face of the Pad after wiping.



3. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused Dust-Free Cotton Pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

✻ Never move the Pad back and forth.



4. Using the SAME face of the Pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

NOTES

- *Even when the PC Drum is only locally dirtied, wipe the entire surface.*
- *Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.*
- *If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.*

Handling of the Imaging Cartridge

✻ Only for Products Employing an Imaging Cartridge.

1. During Transportation/Storage:

- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

2. Handling:

- Store the Imaging Cartridge in a place that is not exposed to direct sunlight.

3. Precautionary Information on the PC Drum Inside the Imaging Cartridge:

- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

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1 INSTALLATION

1.1 INSTALLATION IMAGING UNIT

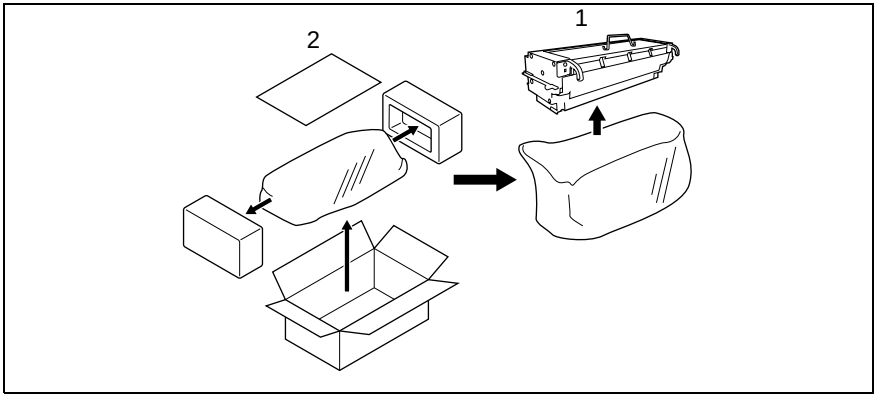
NOTE

Always keep the imaging unit in a horizontal position when handling it.

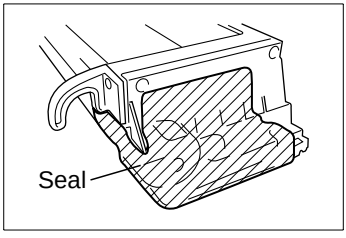
1.1.1 Unpacking

Remove the imaging unit from the box and check that it contains the following items.

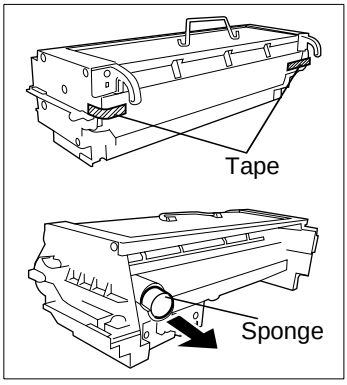
1. Imaging unit.....1
2. Installation instructions.....1



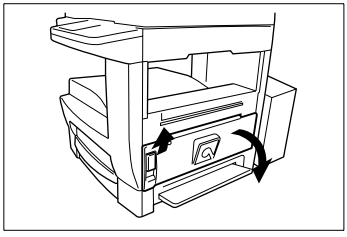
1.1.2 Imaging Unit Installation



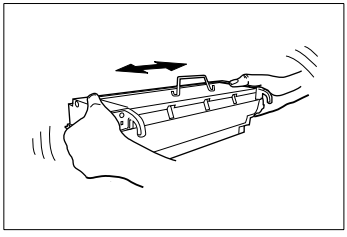
1. Remove the seal from the imaging unit.



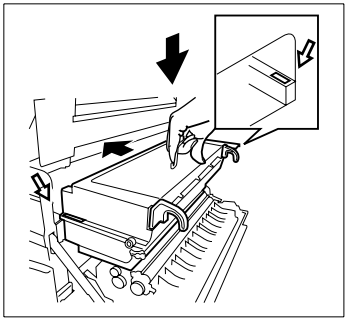
2. Remove two pieces of tape and sponge (rear) as shown in the figures.



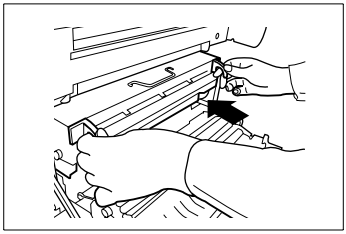
3. Release the lock lever and open the right cover.



4. Shake the new imaging unit horizontally.

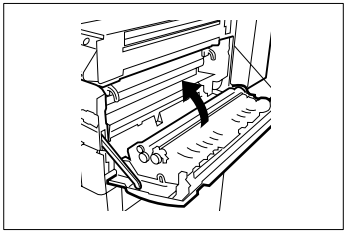


5. Align the green labels on both ends of the new imaging unit with the green labels on the rails of the copier and position the imaging unit. Grasp the handles to position the imaging unit and push it into the copier.



NOTE

Push the imaging unit all the way into the copier. The right cover cannot be closed if the imaging unit is not pushed all the way into the copier.

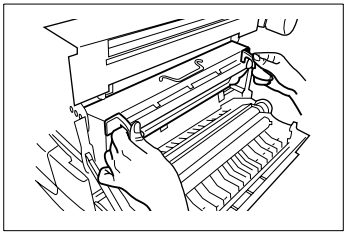


6. Close the right cover.

NOTE

Return the used imaging unit to the service center to ensure efficient use of the earth's natural resources. Do not dispose of the unit and be sure to return it to the serviceman.

1.1.3 When removing the imaging unit



1. Grasp the green handles and gently pull out the imaging unit.

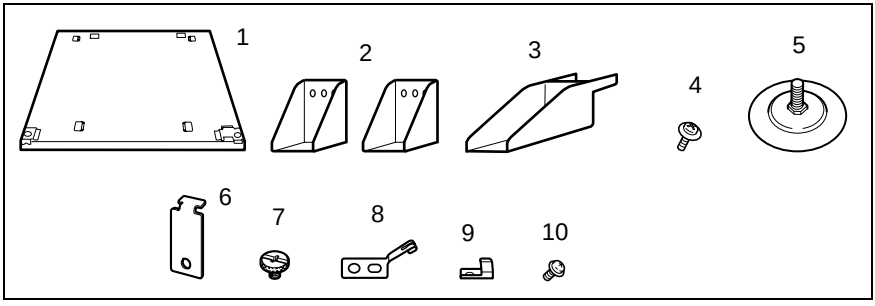
NOTE

Be especially careful when handling the imaging unit. It may be damaged if it is dropped.

1.2 INSTALLATION THE COPY TABLE/COPY DESK (CT-2/ CD-2M)

1.2.1 Unpacking the Copy Table

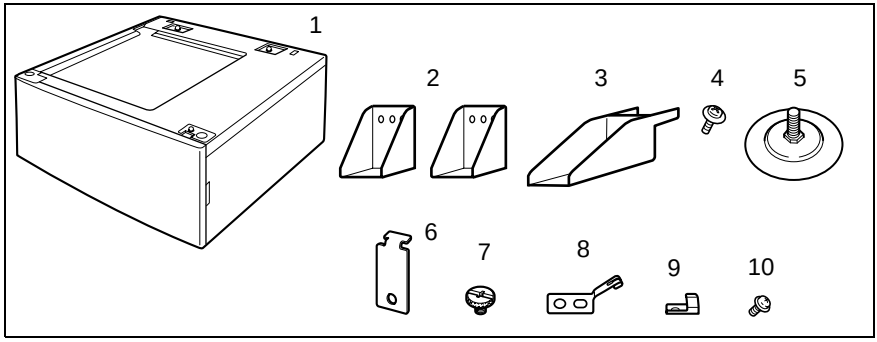
1. Copy table.....1
2. Stabilizers A.....2
3. Stabilizer B.....1
4. Stabilizers screws.....3
5. Adjusters.....2
6. Fixing plates.....4
7. Flat-head screws 4
8. Grounding plates (inside).....2
9. Grounding plate (right-front) 1
10. Grounding plate screws.....3



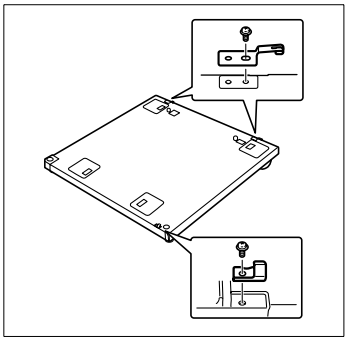
1.2.2 Unpacking the Copy Desk

1. Copy desk..... 1
2. Stabilizers A..... 2
3. Stabilizer B..... 1
4. Stabilizers screws..... 1
5. Adjusters..... 2
6. Fixing plates..... 4
7. Flat-head screws 4
8. Grounding plates (inside)..... 2
9. Grounding plate (right-front) 1

10. Grounding plate screws.....3



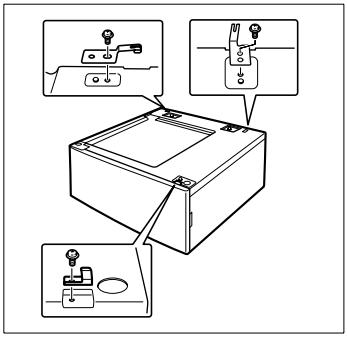
1.2.3 Installing the Copy Table/Copy Desk



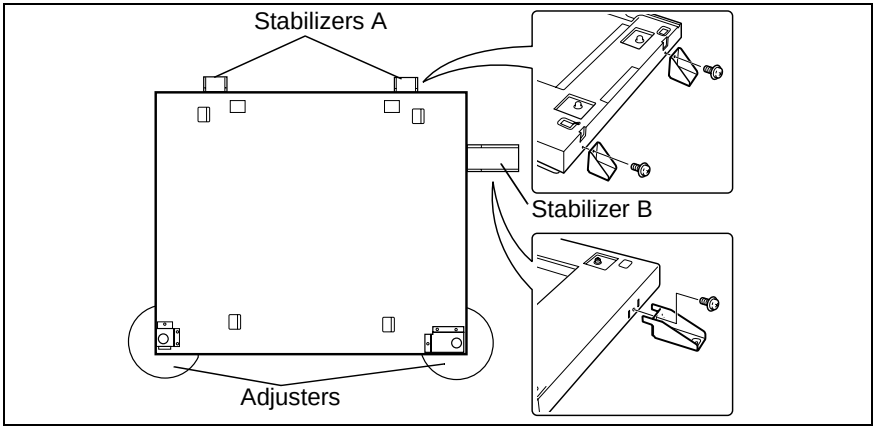
NOTE

Be sure to attach the stabilizers; otherwise, the unit may become unbalanced and fall over, causing injuries.

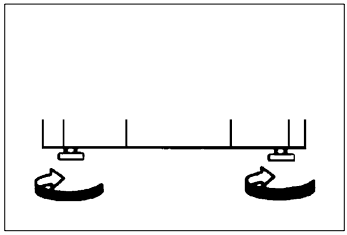
1. Attach the three grounding plates (two inside and one at the right-front corner) to the copy table/copy desk at the positions shown in the illustrations at the left (using a grounding plate screw for each plate).

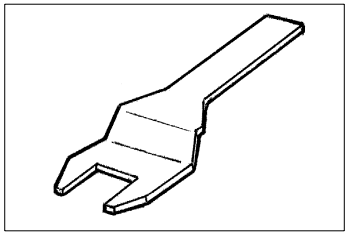


2. Using one screw for each stabilizers, attach the two stabilizers A and stabilizer B to the copy table or copy desk at the positions shown in the illustration below.
3. Attach the two adjusters to the copy table or copy desk at the positions shown in the illustration at the left.



1.2.4 Adjusting the Adjusters





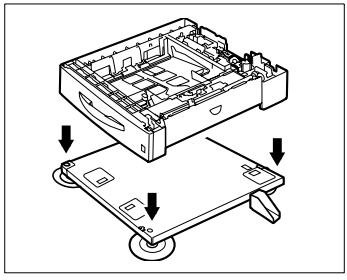
With the wrench (1031-7809-01), adjust the height of the adjusters (front and back) to stabilize the unit on the floor.

The wrench is not enclosed.

Caution

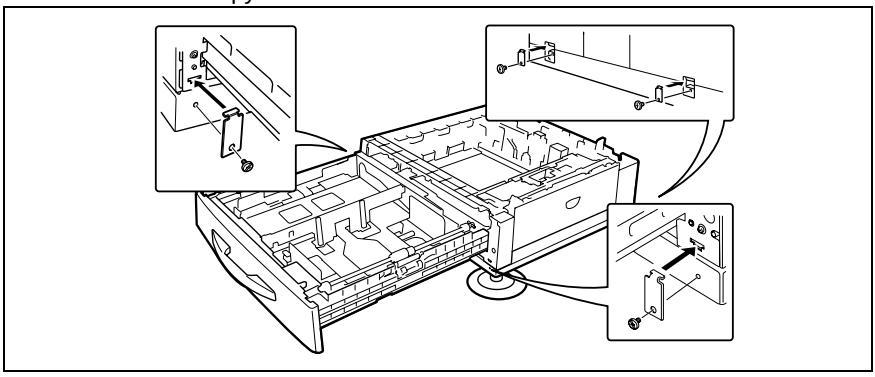
Be sure to set the adjusters as specified. Failure to set the adjusters correctly may cause the unit to become unbalanced and fall, possibly resulting in serious injuries.

1.2.5 Attaching the paper feed unit to the copy table



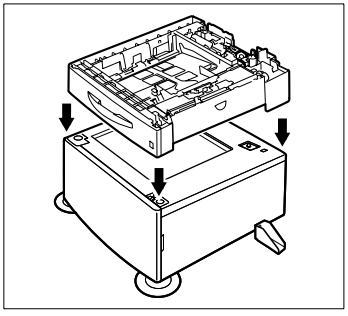
1. Place the paper feed unit on top of the copy table so that the rubber feet on the paper feed unit are correctly aligned on the copy table.

2. Using the four enclosed fixing plates and fixing plate screws, secure the paper feed unit to the copy table as shown.



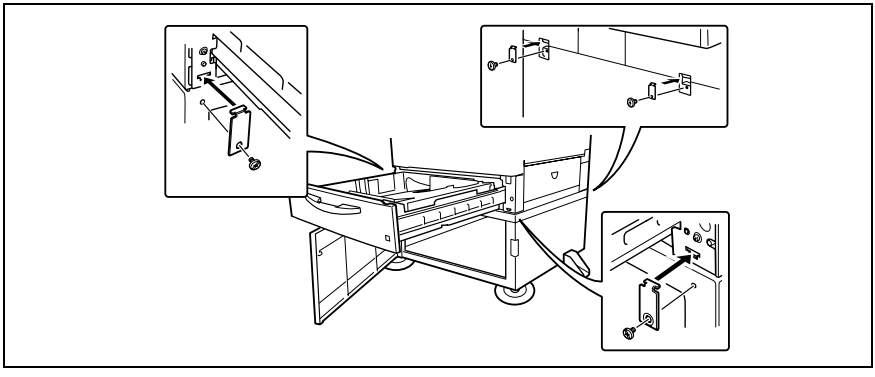
This completes the setup of the copy table.
For instructions on making connections to the copier, refer to “Connecting the Optional Paper Feed Unit to the Copier” in the Setup Instructions for the paper feed unit.

1.2.6 Attaching the paper feed unit to the copy desk



1. Place the paper feed unit on top of the copy desk, ensuring that the two are aligned properly with each other.

2. Using the four enclosed fixing plates and fixing plate screws, secure the paper feed unit to the copy desk as shown.

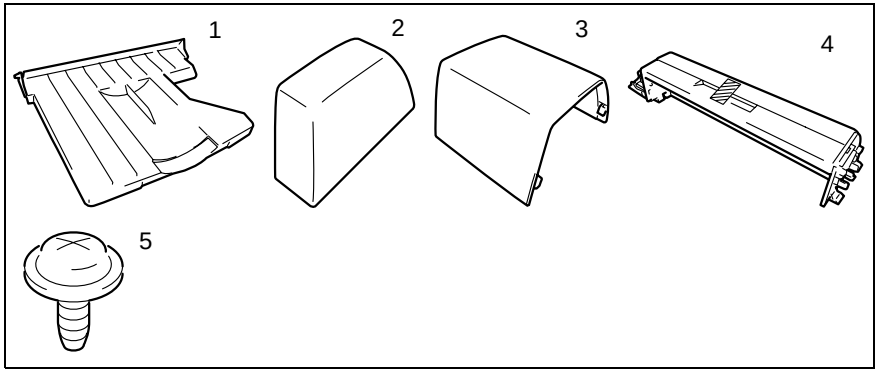


1.3 INSTALLATION JS-100

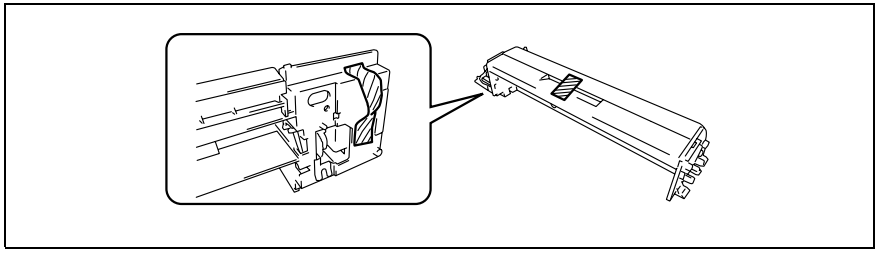
1.3.1 Unpacking

Unpack the Third Tray and check that the following components are contained in the box.

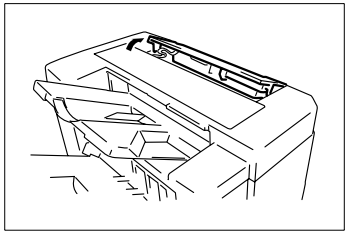
1. Exit Tray 1
2. Front Cover 1
3. Rear Cover 1
4. Third Tray 1
5. Screw (4 x 10 mm) 2



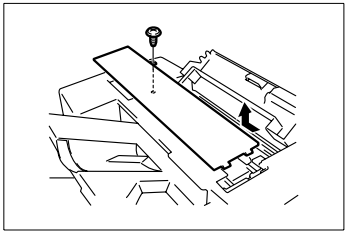
Remove tape and other fixing brackets.



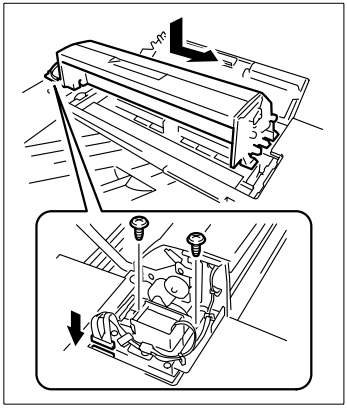
1.3.2 Installing the Third Tray



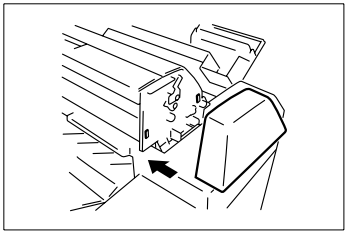
1. Open the Finisher Cover.



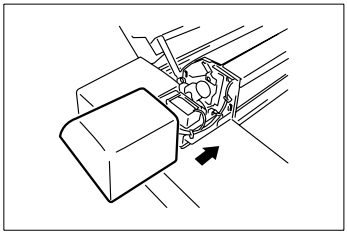
2. Remove one screw from the Dummy Cover.



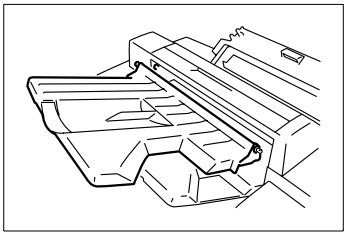
3. Secure the Third Tray (using two screws) and connect the Hookup Cord to the Finisher.



4. Install the Front Cover.



5. Install the Rear Cover.



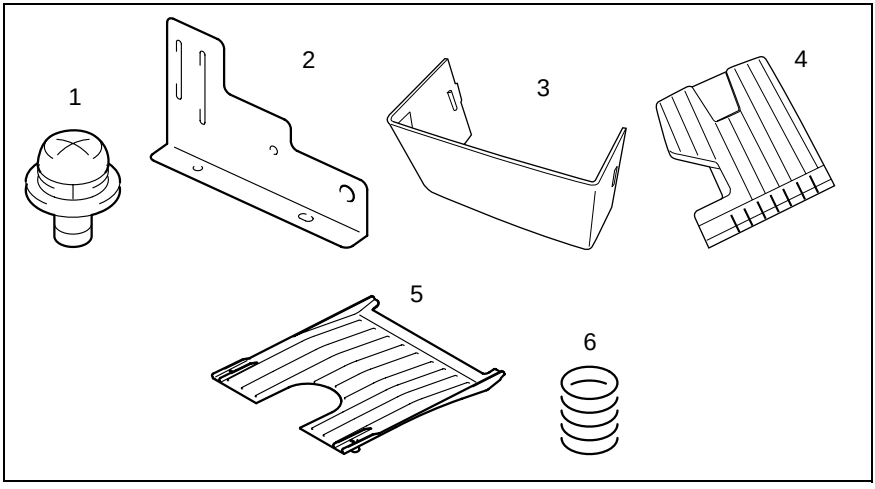
6. Fit the Exit Tray.
7. Close the Finisher Cover.

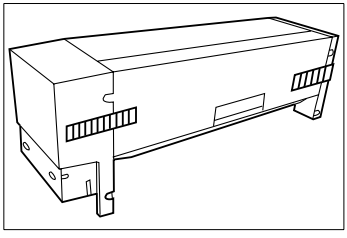
1.4 INSTALLATION JS-201

1.4.1 Unpacking

1. Remove the job tray unit and the accessory box.
2. Verify the following accessories are in the accessory box.

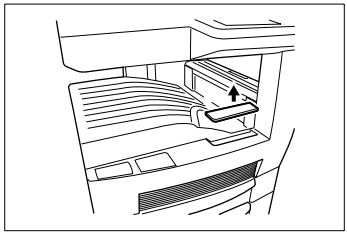
1. Screws (4 mm x 8 mm)..... 3
2. Mounting frame..... 1
3. Decorative cover..... 1
4. Copy tray 1
5. Auxiliary tray 1
6. Spring 2



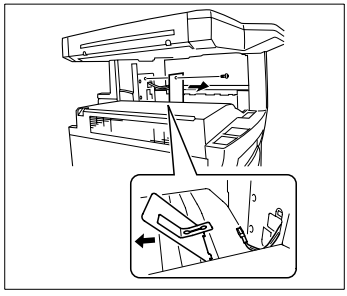


3. Remove the tape from the job tray unit.

1.4.2 Job tray installation



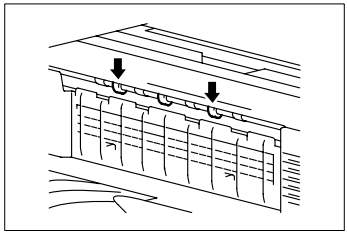
1. Remove the panel from the front side of the copier.



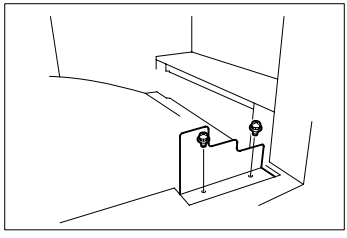
2. Remove the rear paper exit cover (1 screw) and free the harness that is attached to the backside of the cover.

NOTE

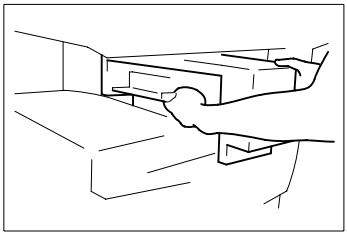
Make sure that the harness does not fall inside the main unit.



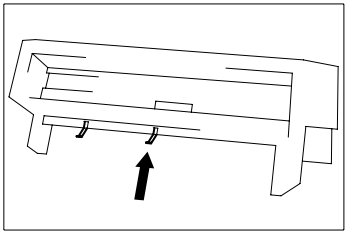
3. Cut off the treaded tires from only the two Exit Rolls on both sides of the machine.



4. Use two accessory screws (4 x 8 mm) to secure the mounting frame.

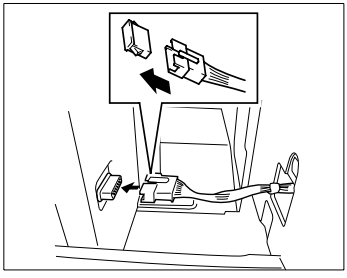


5. Place the job tray unit onto the mounting frame as shown.

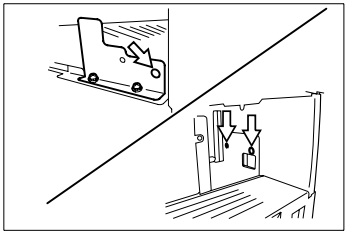


NOTE

When placing the job tray unit, be sure to raise the plastic sensors indicated by the arrows to prevent them from touching the mounting frame.

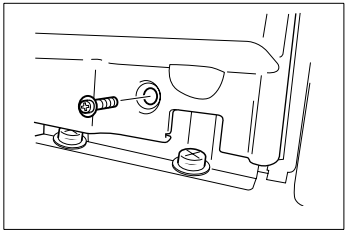


6. Remove the dummy connector from the copier harness and plug in the copier harness at the rear of the and the copier.



NOTE

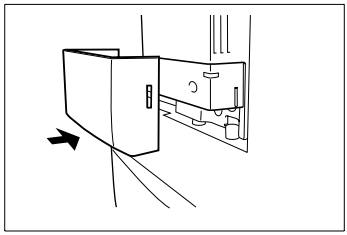
Install the job tray unit rear side and front end so the pins pass through the holes in the parts indicated by the arrows.
Make sure that the harness is plugged in correctly and that the harness does not become caught between the job tray unit and the copier.



7. Use an accessory screw (4 x 8 mm) to secure the job tray unit at the front.

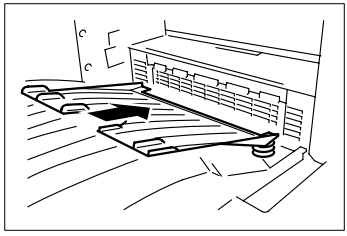
NOTE

Tighten the screw after aligning the hole position.

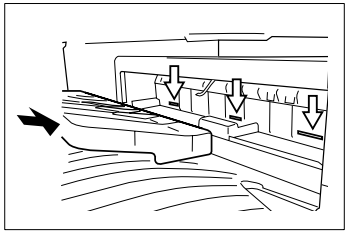


8. Press on the accessory decorative cover.

1.4.3 Copy Tray Set-up



1. Reverse the Auxiliary tray and set the spring into place.
2. Attach the accessory auxiliary tray to the copier in alignment with the hole (at two place) in the copier.



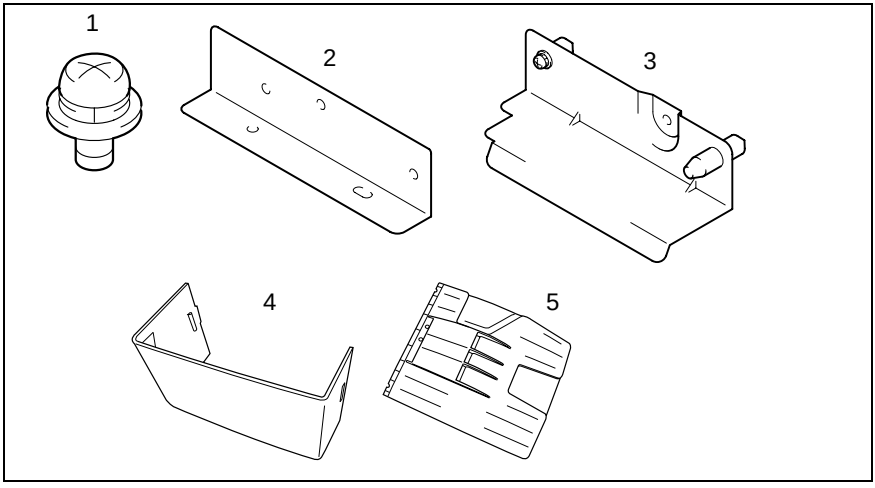
3. Attach the accessory copy tray by aligning the three tabs of the tray with the three insertion holes of the main unit.

1.5 INSTALLATION OT-102 (Shift Tray)

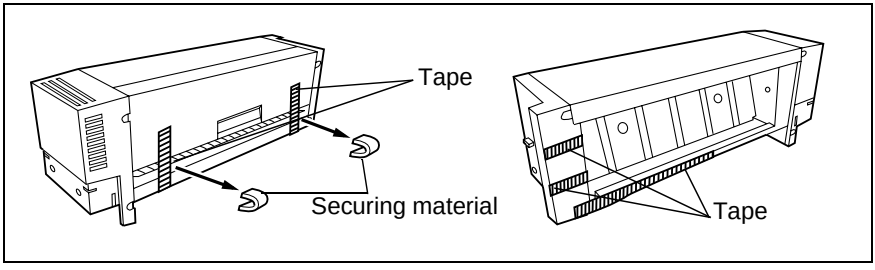
1.5.1 Unpacking

1. Remove the shift tray unit and accessory box.
2. Verify the following accessories are in the accessory box.

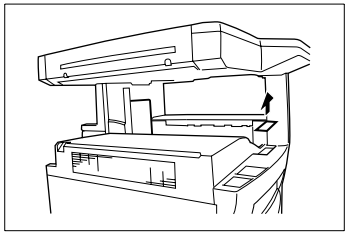
1. Screw (4 mm x 8 mm) 4
2. Mounting frame (front) 1
3. Mounting frame (rear) 1
4. Decorative cover 1
5. Copy tray 1



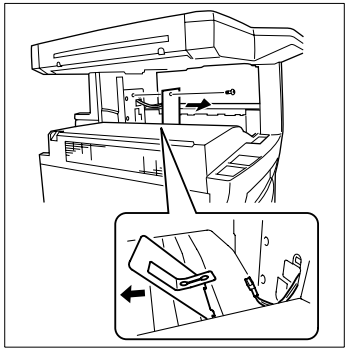
3. Remove the tape and securing materials.



1.5.2 Shift Tray Installation



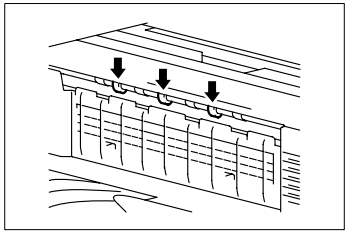
1. Remove the panel from the front side of the copier.



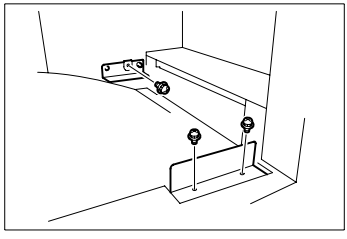
2. Remove the rear paper exit cover (1 screw) and free the harness that is attached to the backside of the cover.

NOTE

Make sure that the harness does not fall inside the copier.



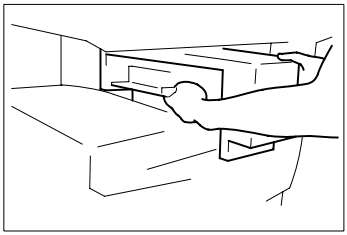
3. Cut off the treaded tires from the Exit Rolls of the machine.



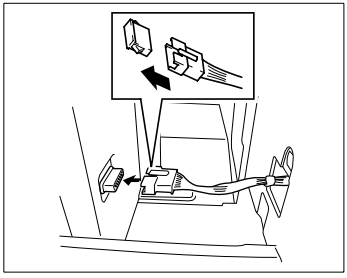
4. Use three screws (4 ¥ 8 mm) to secure the rear end of the mounting frames (front/rear) from the front side of the copier as shown.

NOTE

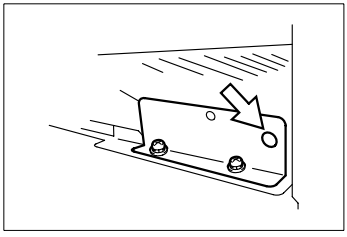
Install the mounting frame so the pins pass through the holes at the rear side of the copier.



5. Place the shift tray unit onto the mounting frame as shown.

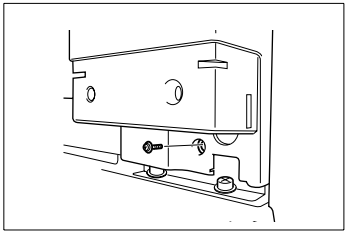


6. Remove the dummy connector from the copier harness and plug in the copier harness at the rear of the unit.

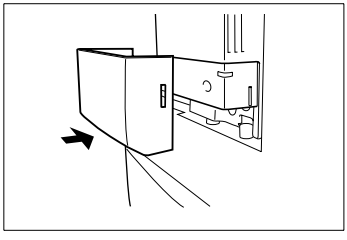


NOTE

Install the shift tray unit front end so the pin passes through the hole in the part indicated by the arrow.
Make sure that the harness is plugged in correctly and that the harness does not become caught between the shift tray unit and the copier

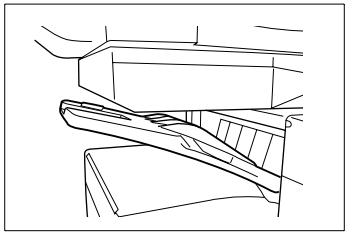


7. Use an accessory screw (4 x 8 mm) to secure the shift tray unit at the front.



8. Press on the decorative cover.

1.5.3 Copy Tray Setting-up



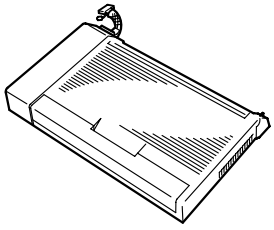
Install the accessory copy tray in the shift tray unit.

1.6 INSTALLATION AD-15

1.6.1 Unpacking

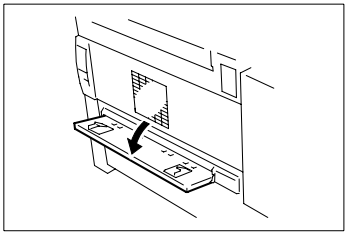
1. Remove the automatic duplex unit from the packing box. Remove the plastic bag, tape and the label that indicates not to raise the unit.
2. Verify the packing contents.

1. Automatic duplex unit..... 1
2. Unpacking and setting-up instructions 1

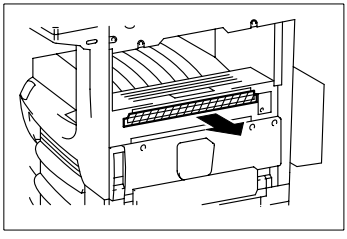


UNPACKING/SETTING-UP INSTRUCTIONS

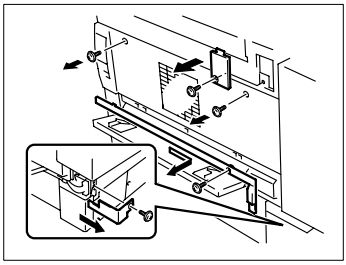
1.6.2 Automatic Duplex Unit Setting-up



1. Turn off the power and disconnect the power cord and interface cable from the copier. Open the manual feed table.
2. Remove the Duct Cover. (for Di251 only)



3. Peel off the polyester film as shown.

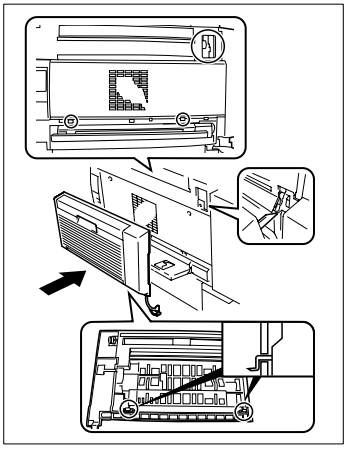


4. Remove the duplex unit drive connection cover, manual feed tray cover and the wiring cover. (Use a Phillips head screwdriver. There is one screw for each part.)

5. Remove the two screws marked by the arrows in the right cover of the copier.

NOTE

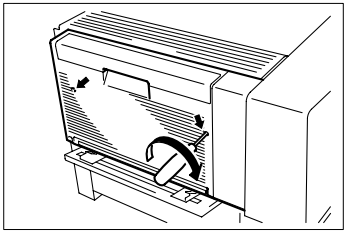
The covers and screws that are removed must be used when the unit is reassembled again for transfer. Keep them in a safe location and be careful not to lose them.



6. Align the bottom hooks and the drive gear of the unit with the mounting site on the copier and mount the duplex unit.

NOTE

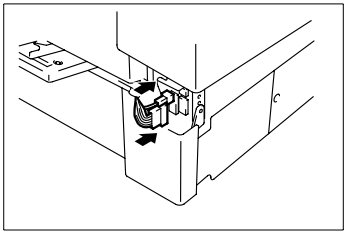
Make sure that the drive gears of the duplex unit and copier are correctly and fully engaged.



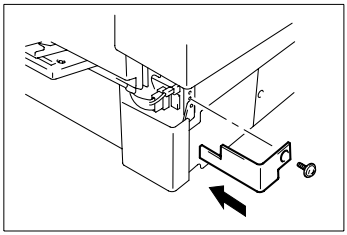
7. Tighten the accessory screws (the two screws are pre-installed in the screw holes) and secure the unit to the copier. (Use a Phillips head screw driver.)

NOTE

Support the duplex unit by hand until it is secured.

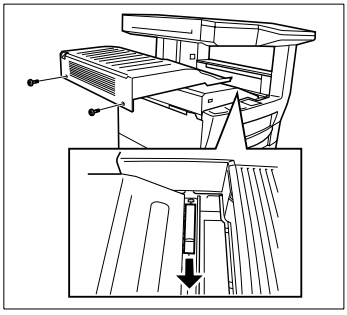


8. Plug in the connectors (two) of the duplex unit to the copier.



9. Reinstall the wiring cover (one screw).

1.6.3 Switching the tension strength of the automatic duplex unit wire



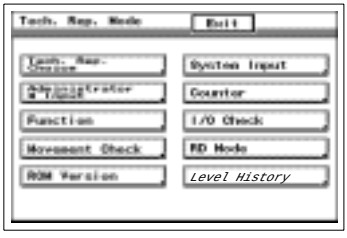
1. Remove the copier exit trag and switch the green lever in the direction of the arrow.

NOTE

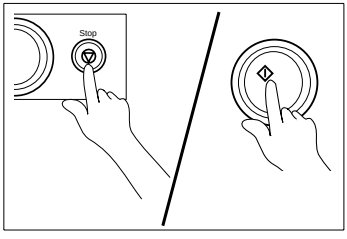
After the automatic duplex unit is installed, opening the duplex unit may unbalance the copier or cause it to shift position due to the added weight. Be sure to switch the tension after installation.

2. Reinstall the exit tray.

1.6.4 Reference Gap Adjustment

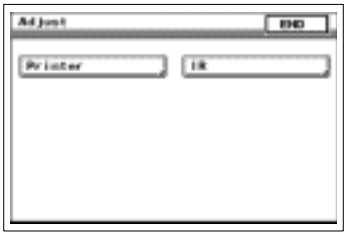


1. Access the service mode screen. (Refer to the service manual.)



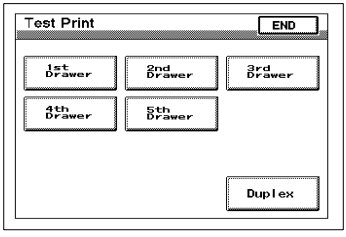
2. Press the stop key and then immediately press the start key.

   The Adjust Mode will be displayed.

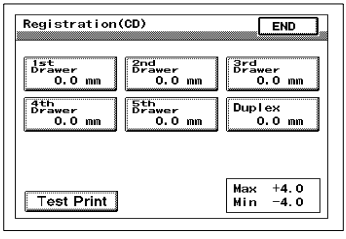


3. Touch “Printer”.

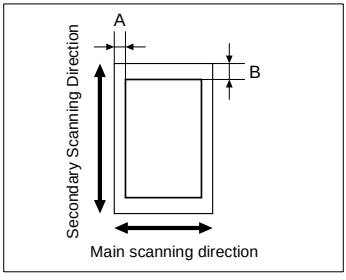
4. Touch the key for the direction to be adjusted.



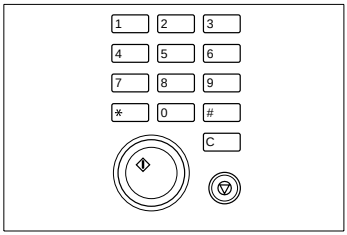
5. Touch “Test Print”.



6. Touch “Duplex” and press the start key.



Measure margins A and B on the copy.
Standard Values:
A4C 10.0 mm ± 3.0 mm
Letter C 10.0 mm ± 3.0 mm
If the measured width is not within the standard values, use the following procedure for adjustment.



7. After pressing the Clear key, you can change the value using the key pad.

   Use the * key to change between + and -.

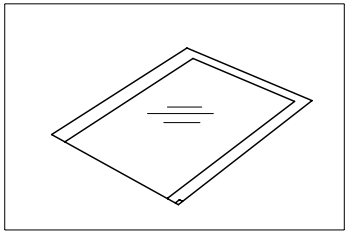
8. Touch “OK” to complete the setting.
9. Make another test copy and check the image once again.

1.7 INSTALLATION AF-9

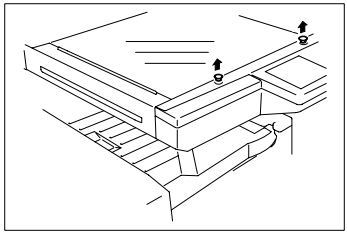
1.7.1 Unpacking

ADF Kit I shown below must be installed when installing the ADF.

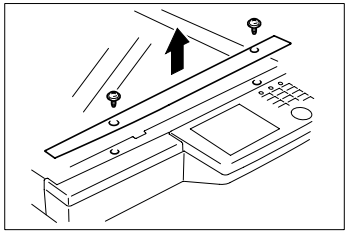
Original Glass (for AF-9) 1



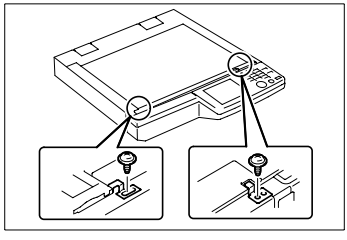
1.7.2 Installing ADF Kit



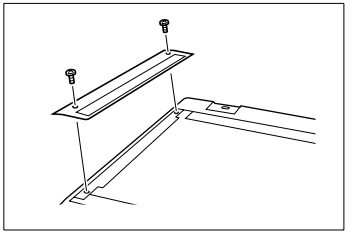
1. Remove the caps (two).



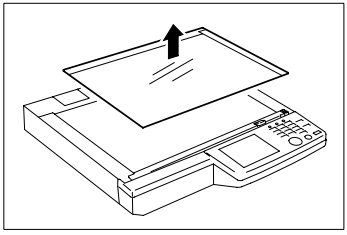
2. Remove the Upper Front Cover (two screws).



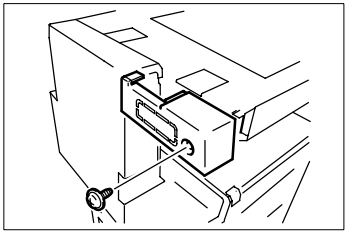
3. Remove the Original Cover brackets (two).



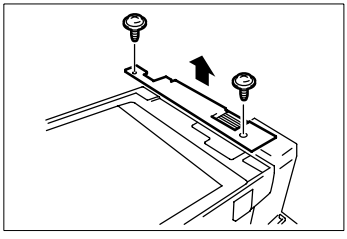
4. Remove the Upper Left Cover (two screws).



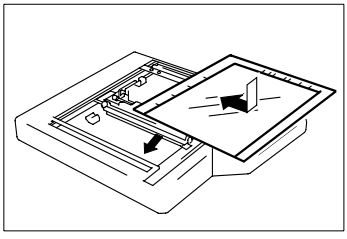
5. Remove the Original Glass.



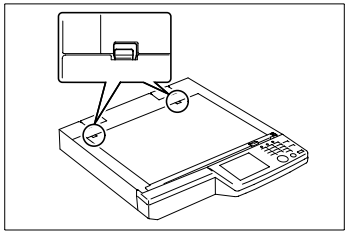
6. Remove the Right Rear Cover.



7. Remove the Rear Upper Cover (two screws).

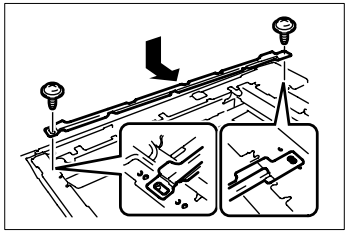


8. Press the Original Glass toward the rear of the copier.



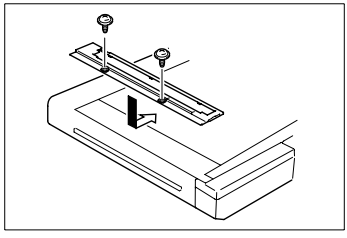
NOTE

Check that the glass holding plates located (at two places) in the rear of the Original Glass are in contact with the surface of the Original Glass.



9. Pressing the Glass support toward the Original Glass install the Glass support at the location shown (screw 3×6mm Black).

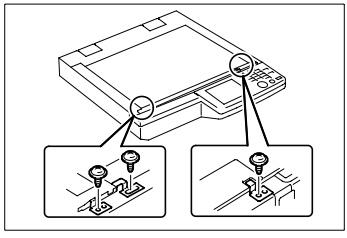
   Use the Glass Support furnished with the ADF.



10. Press ADF Glass Assy up against the Glass support and secure it in position (two screws).

    Use the screws that have been removed in step 4 to secure the assy in position.

    Use the ADF Glass Assy furnished with the ADF.



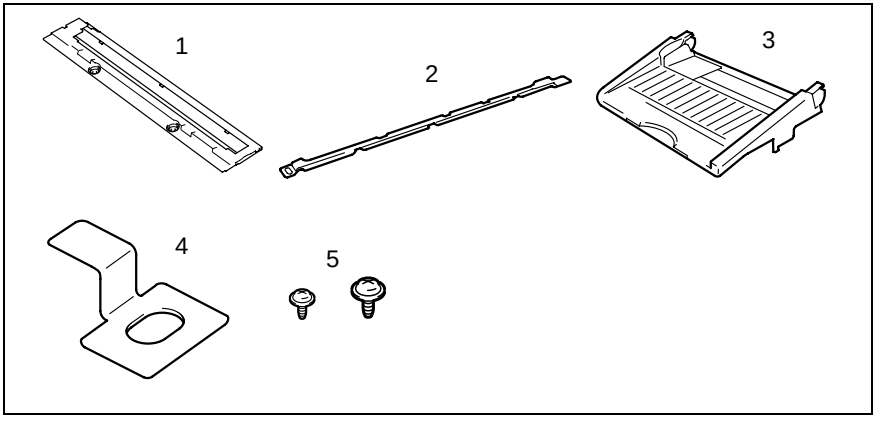
11. Install the Original Cover brackets at the locations shown (one screw each).
    Use the screw which has been removed in step 3 for A.
    Use the screw contained in the ADF for B.
    (Use the screw furnished with the ADF for B.

12. Reinstall the covers which have been removed.

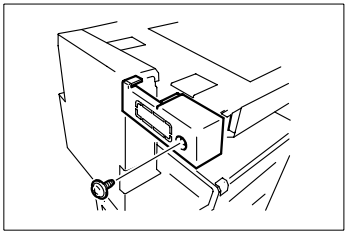
1.7.3 Components

Take the ADF out of the box and check that the following accessories are included.

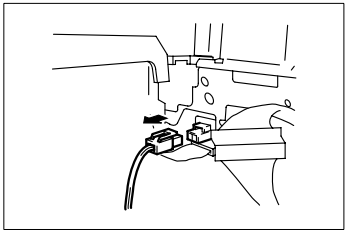
1. ADF Glass Assy.....1
2. Glass support.....1
3. Tray.....1
4. Holder 1
5. Screw (3×6mm Black).....3
   Screw (4×8mm Silver).....3



1.7.4 Installation



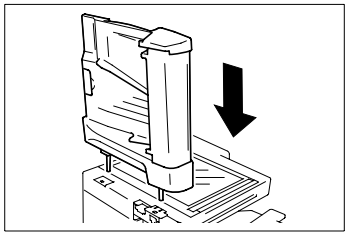
1. Remove the Right Rear Cover.



2. Unplug the connector that is connected to the copier.

NOTE

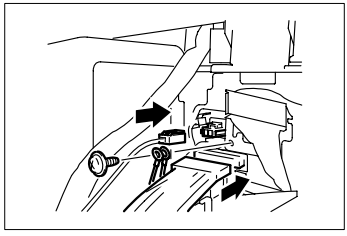
Tidy up the connector which has been removed to ensure that it does not interfere with the subsequent steps.



3. Position the Automatic Document Feeder.

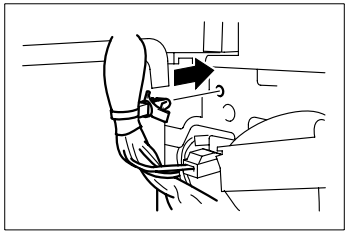
NOTE

Push the excess length of the cable to the rear of the Automatic Document Feeder.

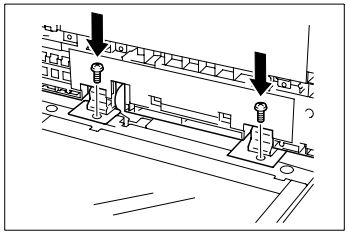


4. Connect the (two) connectors of the Automatic Document Feeder and install the ground wire.

   Screw 4x8 Silver

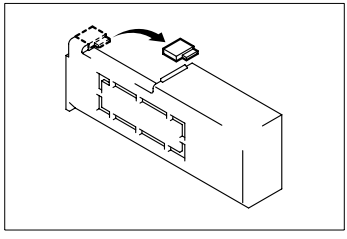


5. Insert the tie band fitted to the cable of the Automatic Document Feeder into the frame of the copier to secure the cable in position.

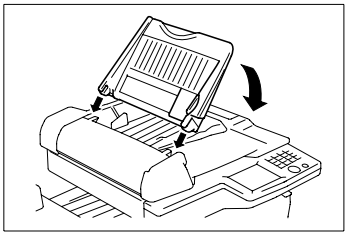


6. Secure the ADF.

   Screw 4x8 Silver

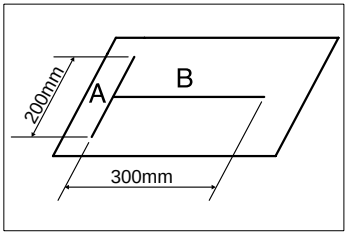


7. Cut out the knockout shown in the illustration.
8. Reinstall the cover which has been removed.



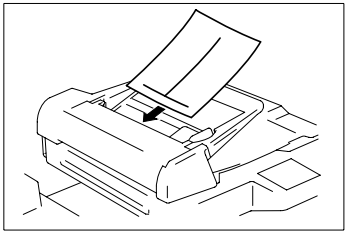
9. Install the Tray.

1.7.5 Checking for Zoom Adjust

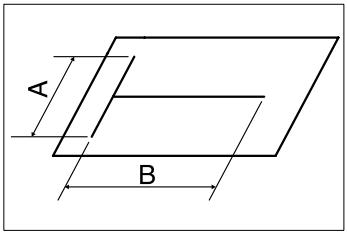


1. Prepare a test chart (A3) as shown.

   Draw a 200-mm-long straight reference line in the crosswise direction (A: CD).
   Draw a 300-mm-long straight reference line in the feeding direction (B: FD).



2. Load the test chart in the ADF and make a full-size copy.

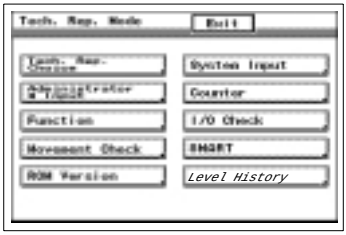


3. Check that the lengths of the reference lines reproduced on the copy, A (CD) and B (FD), meet the following specifications.

   Reference Line Registration Specifications:
   A (CD): 200 ± 2.0 mm
   B (FD): 300 ± 4.5 mm

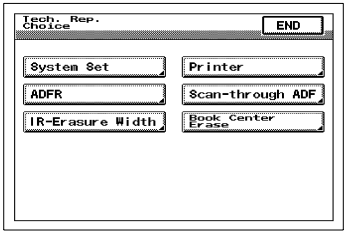
   If the length of the line reproduced on the copy falls outside the specified range, make the “Registration Adjustment.”

1.7.6 Registration Adjustment

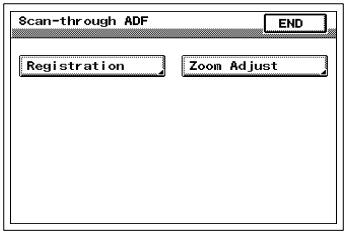


1. Access the “Tech. Rep. Mode” menu on the Touch Panel.
   For details on how to access the menu, see the Service Manual.

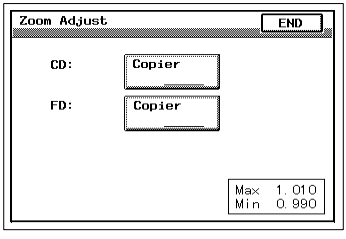
2. Touch “Tech. Rep. Choice.”



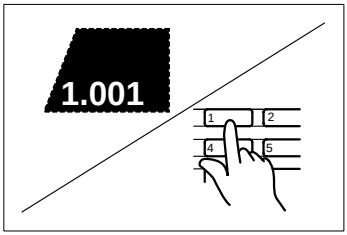
3. Touch “Scan-through ADF.”



4. Touch “Zoom adjust.”



5. Touch CD “Copier” or FD “Copier.”



6. Make the Zoom Adjustment.

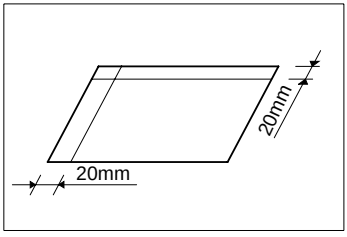
   A (CD) / B (FD)
   If the line is longer than the specifications, adjust toward the reduction side.
   If the line is shorter than the specifications, adjust toward the enlargement side.

7. Press the Clear key.
8. Enter the value from the 10-Key Pad.

   Adjustment Range: x1.010 to x0.990
9. Touch [END] to go back to the initial screen.

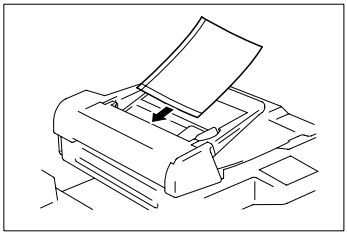
   Make a copy again and check for correct zoom.

1.7.7 Checking for Registration

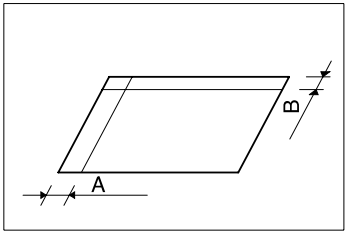


1. Prepare a test chart (A3) as shown.

   Draw a straight reference line at a point 20 mm from the rear edge and another at a point 20 mm from the top edge of the chart.

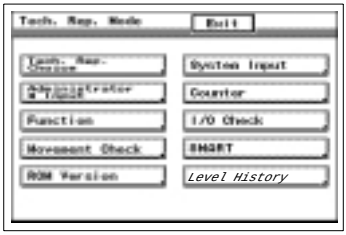


2. Load the test chart in the ADF and make a full-size copy.



3. Check that the margins reproduced on the copy meet the following specifications.
   Margin Registration Specifications:
   Width A: 20 ± 2.0 mm
   Width B: 20 ± 3.0 mm
   If the margins reproduced on the copy fall outside the specified range, make the "Registration Adjustment."

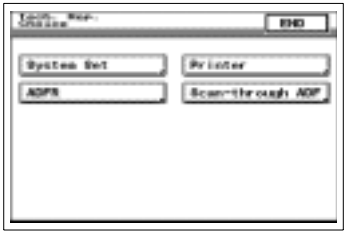
1.7.8 Registration Adjustment



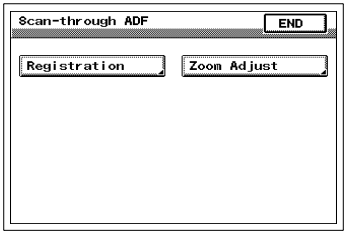
1. Access the “Tech. Rep. Mode” menu on the Touch Panel.

   For details on how to access the menu, see the Service Manual.

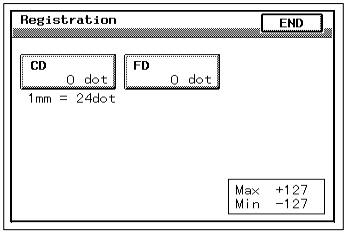
2. Touch “Tech. Rep. Choice.”



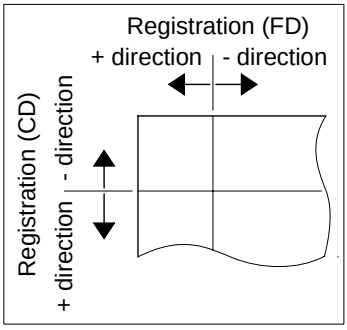
3. Touch “Scan-through ADF.”



4. Touch “Registration.”



5. Touch “CD” or “FD.”



6. Study the illustration on the left and adjust registration.

   [Registration unit : 1 mm = 24 dots]

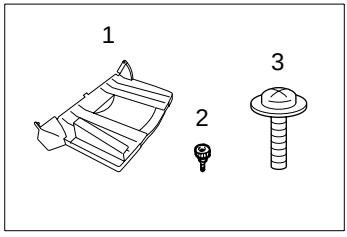
7. Press the Clear key.
8. Press the * key to change the sign to select either + or -.
9. Enter the numeric value from the 10-Key Pad.
10. Touch [END] to go back to the initial screen.

    Make a copy again and check for correct registration.

1.8 INSTALLATION AFR-17

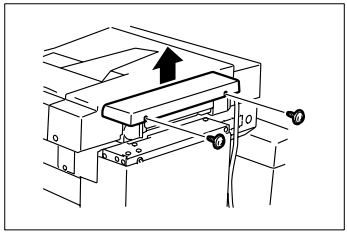
1.8.1 Unpacking

Open the carton and take out the following accessories.

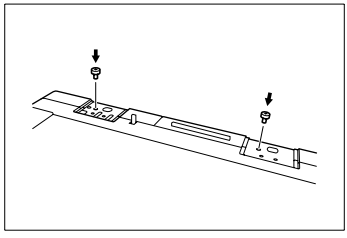


1. Exit tray 4
2. Shoulder Head Screw 4
3. Screw 1

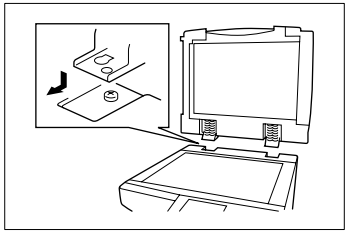
1.8.2 Installing



1. Remove the Rear Cover (two screws) of the copier.



2. Tighten the two Shoulder Screws that come with the document feeder into the holes in the rear.

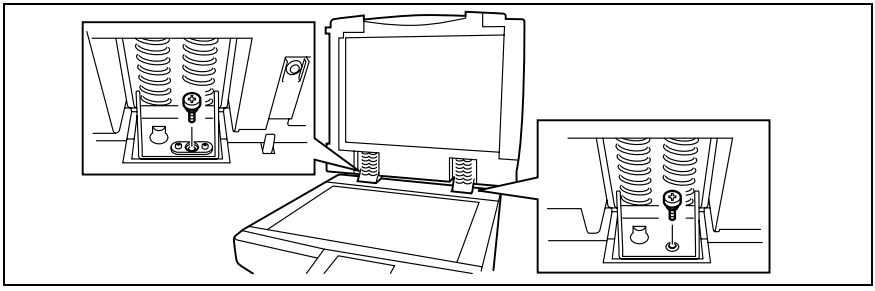


3. Lift the Duplexing Document Feeder up and set it onto the copier so that the screws mentioned above fit into the holes of both hinges.

NOTE

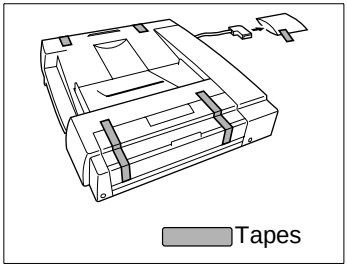
When mounting the Duplexing Document Feeder, be careful to hold it by the top and bottom sides.

4. Secure both hinges of the Duplexing Document Feeder with the 2 remaining Shoulder Screws. Tighten the screws completely with a screwdriver so that they will not come loose.

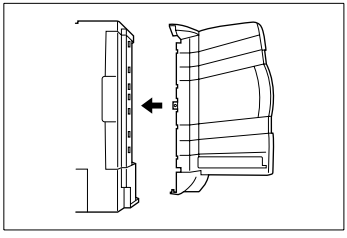


NOTE

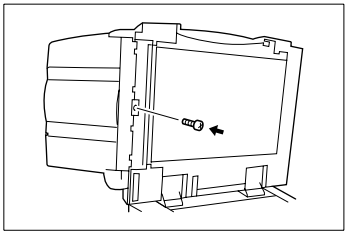
Tighten the Shoulder Screws until there is no clearance between the hinges and the copier body.



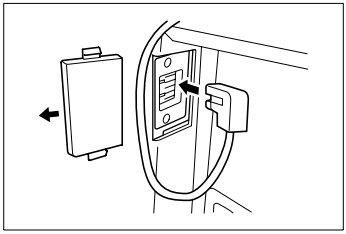
5. Remove all the tape from the Duplexing Document Feeder.
   Remove the plastic bag from the Hookup Cord.



6. Install the exit tray.

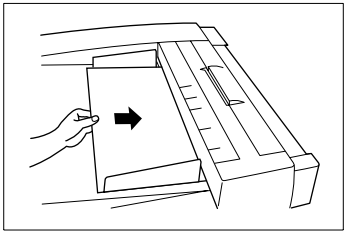


7. Secure the screw from underneath the unit.

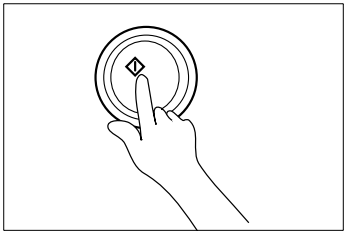


8. Remove the Connector Cover of the copier and plug in the Hookup Cord of the Duplexing Document Feeder.

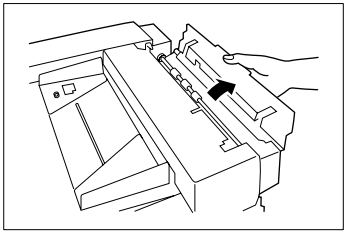
1.8.3 Checking and adjusting the skewed feeding



1. Turn on the power to the main unit.
2. Set the copier into the following modes:
   Auto Paper Select
   One-sided Original - One-sided Copy
3. Place a sheet of A4 or Letter paper crosswise onto the Document Feed Tray.



4. Press the start key and open the paper guide F1 as soon as the paper is fed into the unit and the scanning starts.

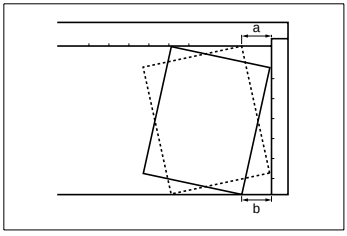


5. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

If the Duplexing Document Feeder is opened quickly, the paper may slide out of position.

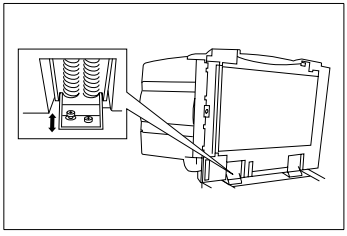
Checking the Skewed Feeding



Check whether the paper on the Original Glass leans in the “a” direction or “b” direction.
Tolerance :
1.0 mm or less against the Original Width Scale

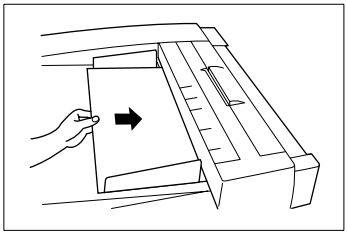
If distance “a” or “b” Is out of tolerance, carry out the following procedure.

Adjusting the Skewed Feeding



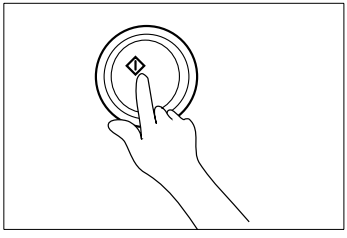
1. Open the Duplexing Document Feeder and loosen the 2 shoulder head screws securing the Right Hinge. Loosen one shoulder head screw securing the Left Hinge.
2. If the paper on the Original Glass leans like “a”, shift the right side of the Duplexing Document Feeder toward the rear side.
   If the original leans like “b”, shift the right side of the Duplexing Document Feeder toward the front side.
   Then tighten the shoulder head screws.

1.8.4 Checking and adjusting the document stop position in the 1-side original mode

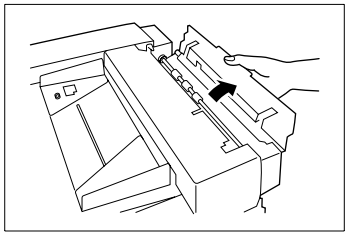


1. Set the copier into the following modes:
   Auto Paper Select
   One-sided Original - One-sided Copy

2. Place a sheet of A4 or Letter paper crosswise onto the Document Feed Tray.



3. Press the start key and open the paper guide F1 as soon as the paper is fed into the unit and the scanning starts.

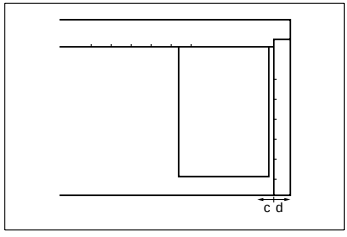


4. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

When the Duplexing Document Feeder is opened quickly, the paper will be knocked out of position.

Checking the Document Stop Position

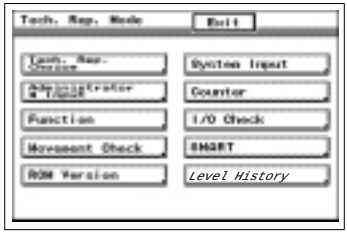


Measure the distance the edge of the sheet deviates in the “c” or “d” direction from the edge of the Original Scale.

Recommended:
Within 1 mm in the C direction from the edge of the Original Scale.

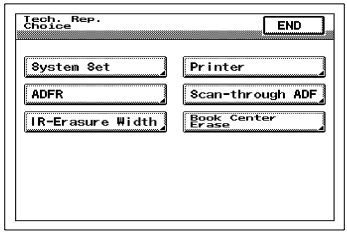
If the distance is out of tolerance, carry out the following procedure.

Adjusting the Document Stop Position



1. Access the initial Tech. Rep. Mode screen. (Refer to the Service Manual for the procedure.)

2. Touch “Tech. Rep. Choice”.



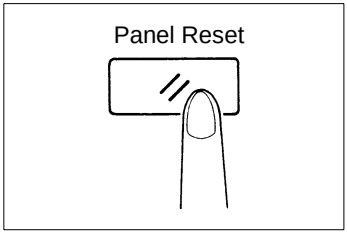
3. Touch “ADFR”.

4. Touch “Original Stop Position”.

5. Select the “1-Side Set” mode.

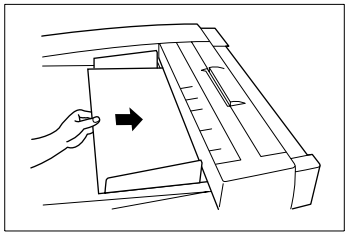
6. After pressing the Clear key, use the key pad to enter the adjustment.

   Use the * key to switch between + and -.
   +: Adjusts in direction C
   -: Adjusts in direction D

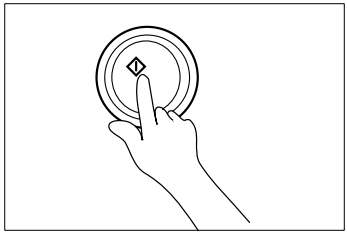


7. Press the Panel Reset Key to display the Service Mode screen and touch the Stop key. Check the document stop position again.

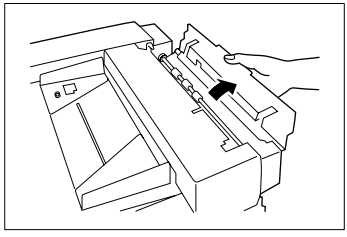
1.8.5 Checking and adjusting the document stop position in the 2-sided original mode



1. Set the copier into the following modes:
   Auto Paper Select
   2-sided Original ▶ 1-sided Copy
2. Place one sheet of A4 or Letter size paper, crosswise onto the Document Feed Tray.



3. Press the Start key and open the paper guide F1 as soon as the scanning for the 2nd side of the original starts.

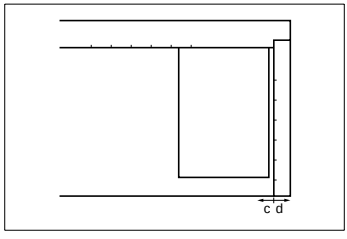


4. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

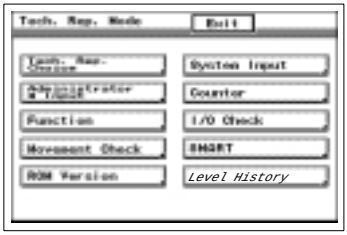
When the Duplexing Document Feeder is opened quickly, the paper will be knocked out of position.

1.8.6 Checking the Document Stop Position

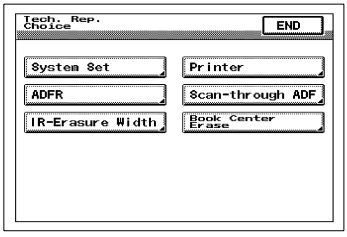


Measure the distance the edge of the sheet deviates in the “c” or “d” direction from the edge of the Original Scale.
Recommended:
Within 1 mm in the C direction from the edge of the Original Scale.
If the distance is out of tolerance, carry out the following procedure.

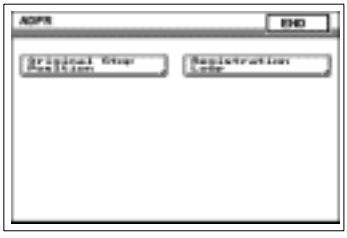
1.8.7 Adjusting the Document Stop Position



1. Access the initial Tech. Rep. Mode screen. (Refer to the Service Manual for the procedure.)
2. Touch “Tech. Rep. Choice”.



3. Touch “ADFR”.

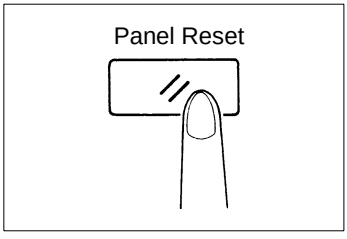


4. Touch “Original Stop Position”.

1.8.8 Adjusting the Document Stop Position

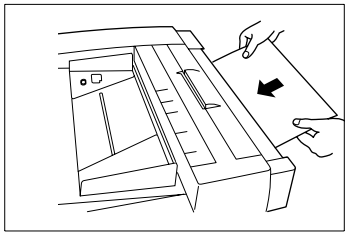
1. Select the “2-Side Set” mode.
2. After pressing the Clear key, use the key pad to enter the adjustment.

   Use the * key to switch between + and -.
   +: Adjusts in direction C
   -: Adjusts in direction D

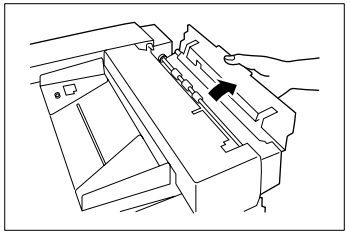


3. Press the Panel Reset Key to display the Service Mode screen and touch the Stop key. Check the document stop position again.

1.8.9 Checking and adjusting the document stop position in the single feed copy mode



1. Set the copier into the following mode:
   Auto Paper Select
   One-sided Original ▶ One-sided Copy
2. Insert a sheet of A4 or Letter size paper crosswise into the Single Feed Tray along the Rear Paper Guide.

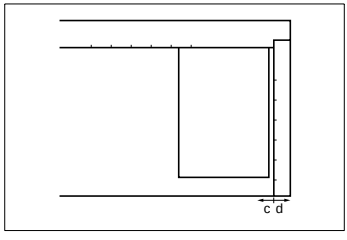


3. When the paper feeds automatically and the scanning starts, open the paper guide F1 immediately.
4. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

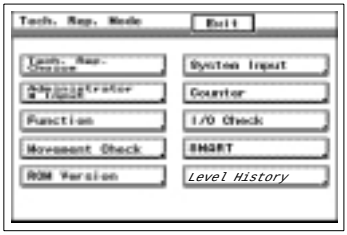
When the Duplexing Document Feeder is opened quickly, the paper will be knocked out of position.

1.8.10 Checking the Document Stop Position



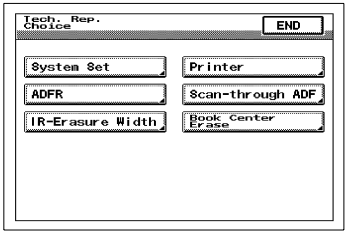
Measure the distance the edge of the sheet deviates in the “c” or “d” direction from the edge of the Original Scale.
Recommended:
Within 1 mm in the C direction from the edge of the Original Scale.
If the distance is out of tolerance, carry out the following procedure.

1.8.11 Adjusting the Document Stop Position

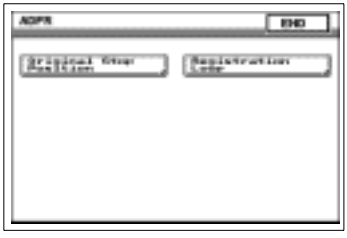


1. Access the initial Tech. Rep. Mode screen. (Refer to the Service Manual for the procedure.)

2. Touch “Tech. Rep. Choice”.



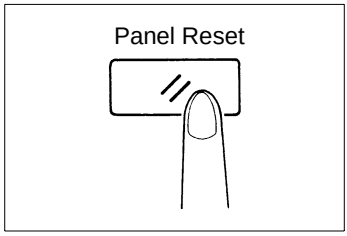
3. Touch “ADFR”.



4. Touch “Original Stop Position”.

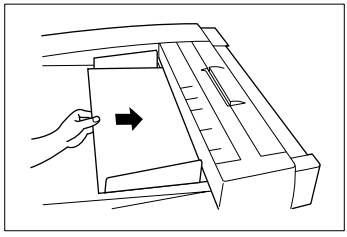
5. Select the “Single Feed Set” mode.

6. After pressing the Clear key, use the key pad to enter the adjustment.
   Use the ***** key to switch between + and -.
   +: Adjusts in direction C
   -: Adjusts in direction D

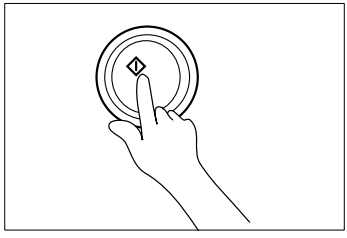


7. Press the Panel Reset Key to display the Service Mode screen and touch the Stop key. Check the document stop position again.

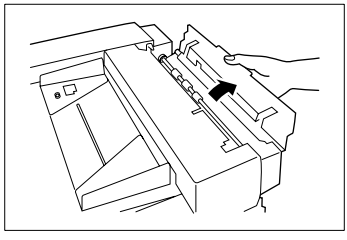
1.8.12 Checking and adjusting the position of the rear guide plate



1. Set the copier into the following modes:
   Auto Paper Select
   One-sided Original ▶ One-sided Copy
2. Place a sheet of A4 or Letter paper crosswise onto the Document Feed Tray.



3. Press the Start Key and open the paper guide F1 as soon as the scanning starts.

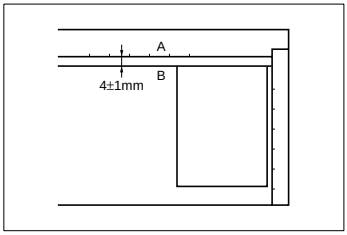


4. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

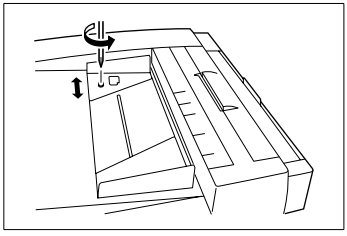
When the Duplexing Document Feeder is opened quickly, the paper will be knocked out of position.

1.8.13 Checking the Position of the Rear Guide Plate



Check the paper to see how many mm its rear edge deviates in the “A” or “B” direction with reference to a line 4.0 mm to the front of the end face of the FD Scale.
Allowable deviation : 4.0 ± 1.0 mm

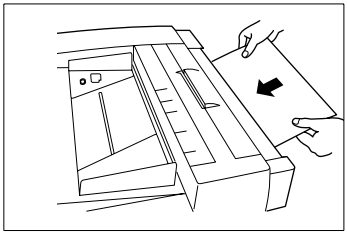
1.8.14 Adjusting the Position of the Rear Guide Plate



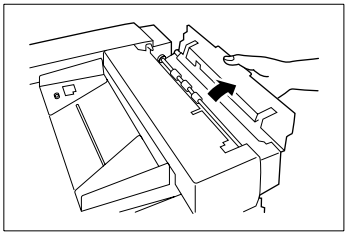
Move the Rear Guide Plate to the front or back as necessary to meet the above requirements.

Less than 3.0 mm : To the front
More than 5.0 mm : To the back

1.8.15 Checking and adjusting the position of the guide plate in the single feed copy mode



1. Set the copier into the following mode:
   Auto Paper Select
   One-sided Original ▶ One-sided Copy
2. Insert a sheet of A4 or Letter size paper crosswise into the Single Feed Tray along the Rear Paper Guide.
3. When the paper feeds automatically and the scanning starts, open the paper guide F1 immediately.

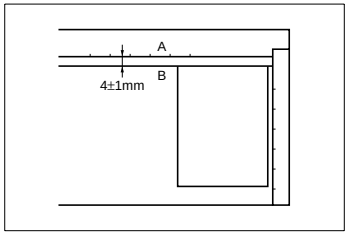


4. After the paper is fed onto the Original Glass, open the Duplexing Document Feeder gently.

NOTE

When the Duplexing Document Feeder is opened quickly, the paper will be knocked out of position.

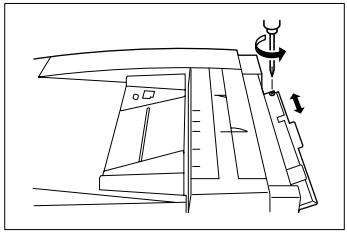
1.8.16 Checking the Position of the Single Feed Copy



Check the paper to see how many mm its rear edge deviates in the “A” or “B” direction with reference to a line 4.0 mm to the front of the end face of the FD Scale.

Allowable deviation : 4.0 ± 1.0 mm

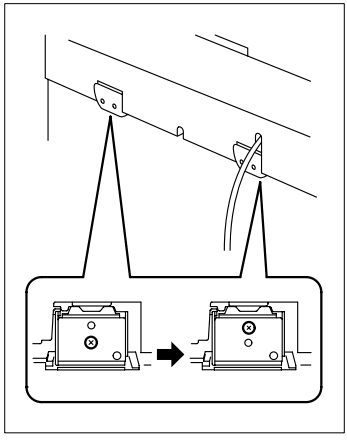
1.8.17 Adjusting the Position of the Single Feed Copy



Move the Guide Plate to the front or back as necessary to meet the above requirements.

Less than 3.0 mm : To the front
More than 5.0 mm : To the back

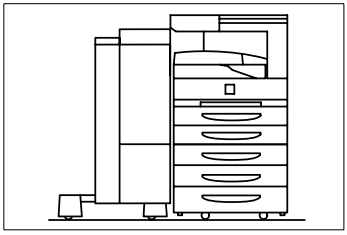
1.8.18 Securing the stoppers



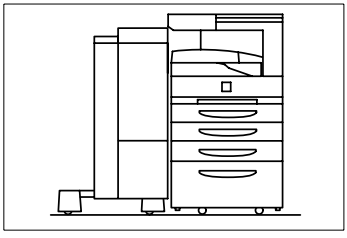
Remove the shoulder screws (one each at the right- and left-hand side) in the rear of the copier and tighten these shoulder screws into the corresponding upper holes.

1.9 INSTALLATION FN-109 / FN-110

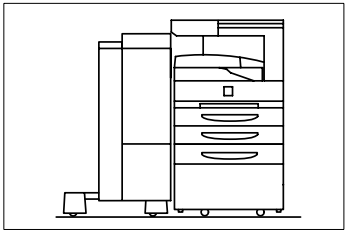
In order to adjust the height of the copier to the height of the finisher, the copy desk, or the copy table and additional paper feed units, or the large-capacity cabinet must be installed.



1. Copier + Paper Feed Unit (three drawers) + Copy Table



2. Copier + Paper Feed Unit (one drawer) + Large Capacity Cassette

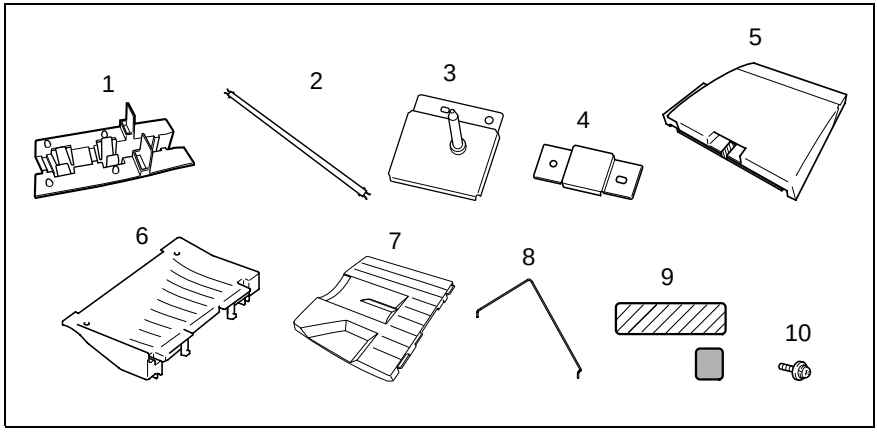


3. Copier + Paper Feed Unit (one drawer) + Copy Desk

1.9.1 Unpacking the Finisher

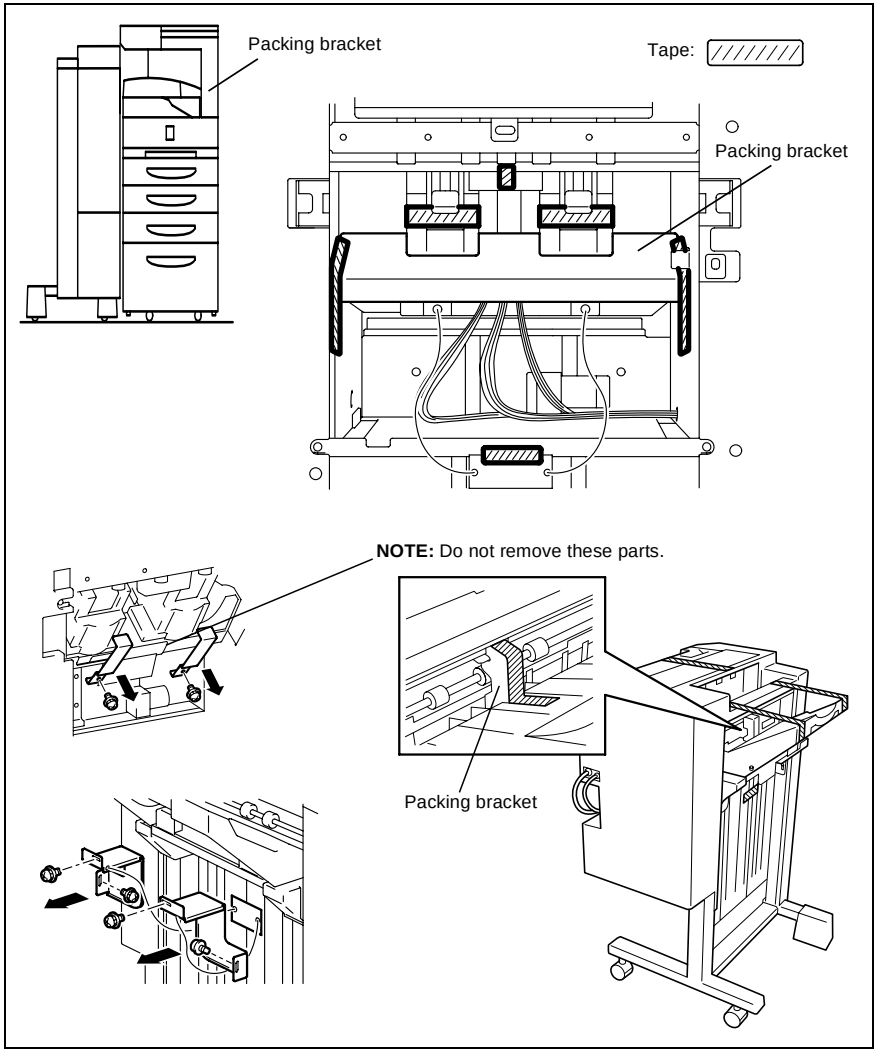
1. Remove the finisher from its box, and then check that the following accessories are also enclosed.

1. Rail guide 1
2. Rail 1
3. Stabilizing pin 1
4. Magnet 1
5. Horizontal transport unit 1
6. Horizontal transport unit mounting base.....1
7. Tray 1
8. Protective guide.....1
9. Labels.....2
10. Screws.....3
11. Setup instructions (this manual) 1

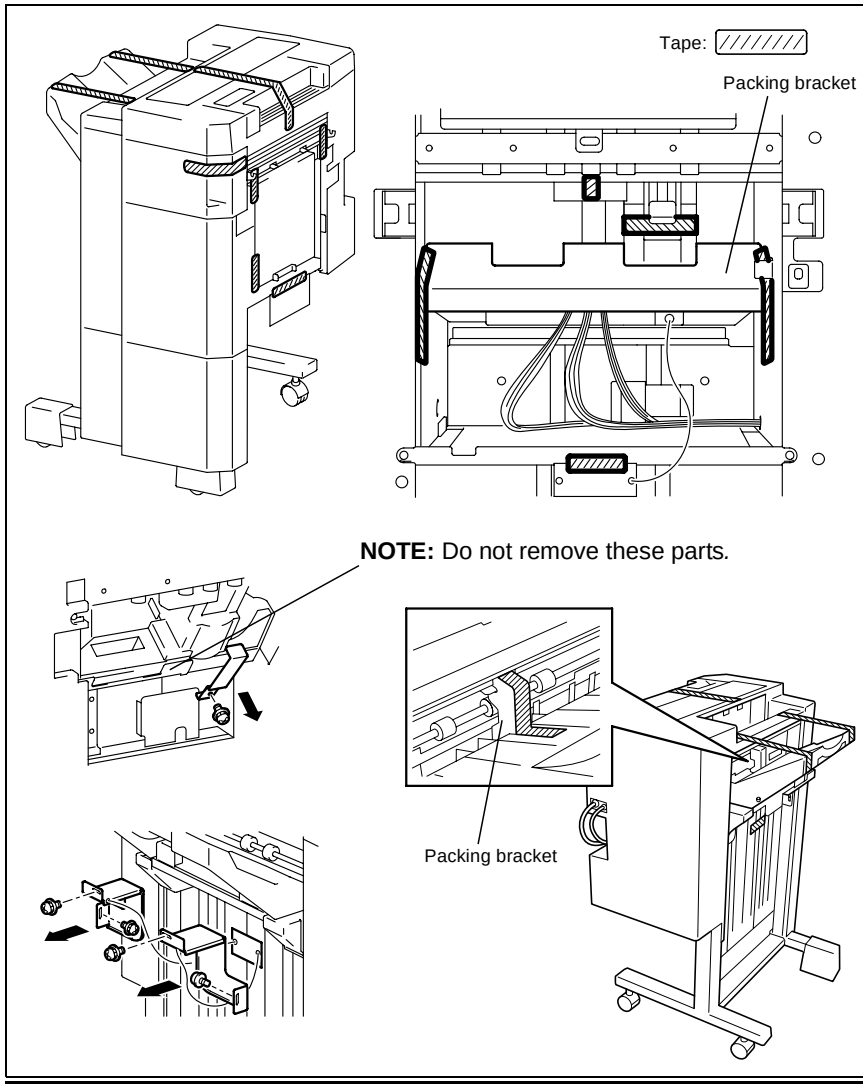


2. Remove all tape and packing brackets.

On the FN-109



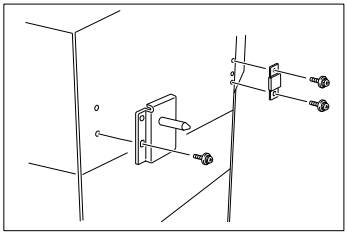
On the FN-110



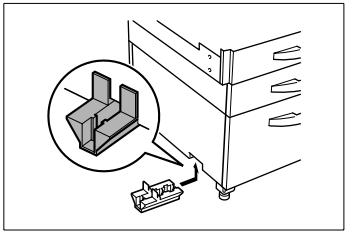
NOTE

Be sure to install the finisher on a level surface.
After installing the finisher, do not move the copier unnecessarily.
If it is necessary to move the copier, follow the procedure described under "Removing the rail" on page I-57.
After moving the copier, perform the operations described in "Installing the Horizontal Transport Unit" and "Installing the Stabilizing Pin and Rail".

1.9.2 Installing the Accessories



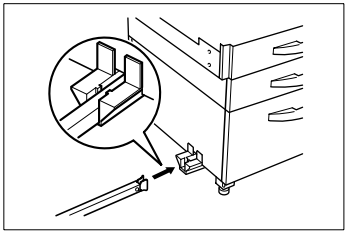
1. Peel off the seal covering the area where the stabilizing pin and magnet will be attached.
2. Attach the enclosed stabilizing pin and magnet with the enclosed flat-head screws to the left side of the copier as shown.



3. Attach the rail guide to the left side of the copier as shown in the illustration.
   If the large-capacity cabinet, copy table or copy desk is installed, attach the rail guide at the same location.

NOTE

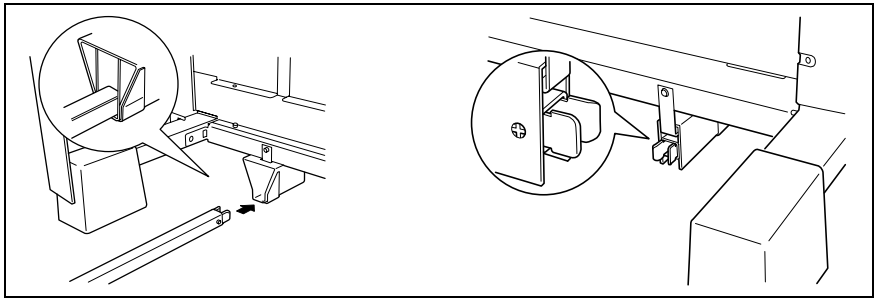
Be sure to fit the correct side of the rail guide onto the copier, and make sure that it snaps into place.



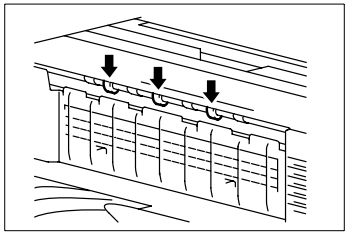
4. Insert one end of the rail into the rail guide on the copier.
5. Slide the other end of the rail installed in step 3 into the rail guide on the finisher.

NOTE

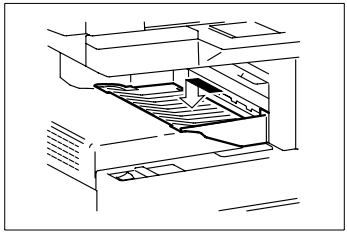
Insert the rail until it snaps into place.
At this time, the finisher should stay attached to the copier, even if you try to pull it away.



1.9.3 Installing the Horizontal Transport Unit



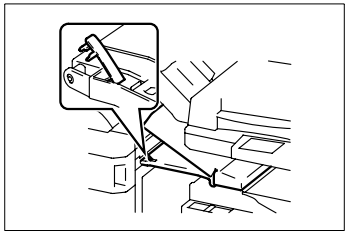
1. Cut off the (three) treaded collars from the Exit Rolls of the copier.



2. Fit the Horizontal Transport Unit mounting base to the copier.

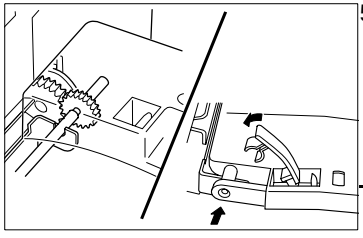
NOTE

Ensure that the protrusions (at two places) on the backside of the mounting base fit into the holes (at two places) in the copier.



3. Mount the Horizontal Transport Unit on the exit section of the copier.

4. Open the cover of the Horizontal Transport Unit and fit the shaft of the Horizontal Transport Unit into position as illustrated.

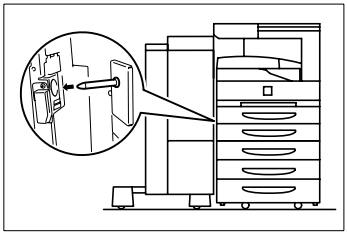


5. Make sure that the gears on the Horizontal Transport Unit and the Finisher are in positive engagement with each other. Then, secure the Horizontal Transport Unit with the lock lever.

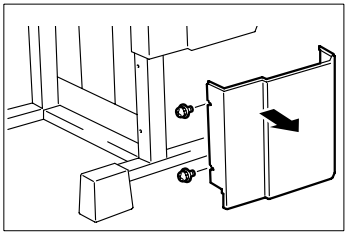
NOTE

Install the Horizontal Transport Unit, making sure that the gears are in positive engagement.

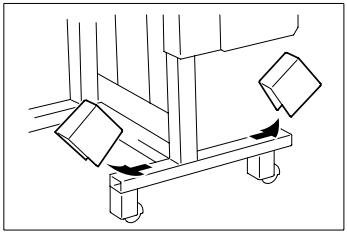
1.9.4 Adjusting the Height and Tilt of the Finisher



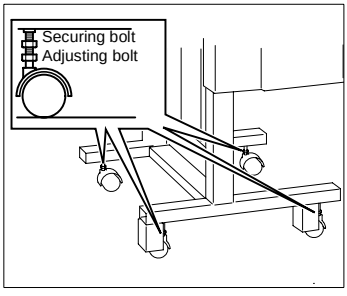
1. If the finisher gradually tilts toward the copier, check the following:
   Are the stabilizing pin and the hole in the finisher at the same height?
   Is the horizontal transport unit not extremely tilted?
   If the finisher is not at the same height as the copier, adjust the copier as follows.



2. Slide the finisher away from the copier, and then remove the lower-front cover (two screws) of the finisher.



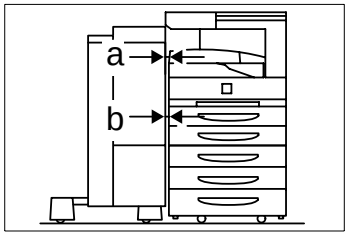
3. Lift the finisher's two caster covers up, and then pull them off.



4. Without turning the adjusting bolt (lower bolt) on the caster, loosen the securing bolt (upper bolt), and then turn the adjusting bolt (lower bolt) as indicated below to adjust the height of the finisher.

   Two rear casters
   If the stabilizing pin is too high:
   Turn the bolt clockwise
   If the stabilizing pin is too low:
   Turn the bolt counterclockwise

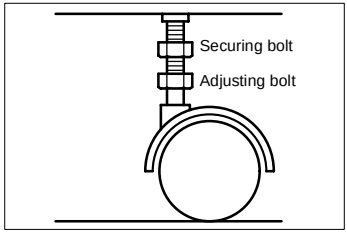
   Two front casters
   If the magnet is too high:
   Turn the bolt clockwise
   If the magnet is too low:
   Turn the bolt counterclockwise



5. If the finisher tilts toward the copier, check the following:

   Are distances a and b equal?

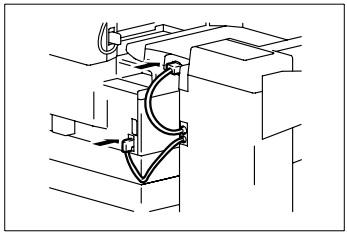
   If a and b are not equal, refer to step 4 above and turn the adjusting bolt (lower bolt) as indicated to adjust the tilt of the finisher.



6. After the adjustment is finished, without turning any of the adjusting bolts (lower bolts), tighten the four securing bolts (upper bolts).

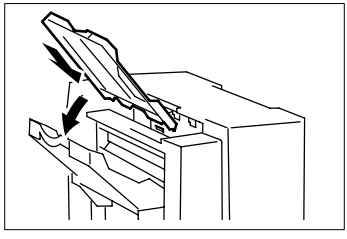
7. Re-install the caster covers and the lower-front cover (two screws).

1.9.5 Connecting the Hookup Cord

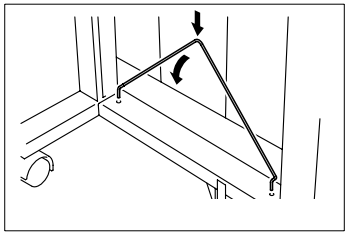


Insert the connector on one end of the hookup cord into the connector on the horizontal transport unit, and then insert the connector on the other end of the hookup cord into the connector on the copier.

1.9.6 Installing the Tray and Protective Guide



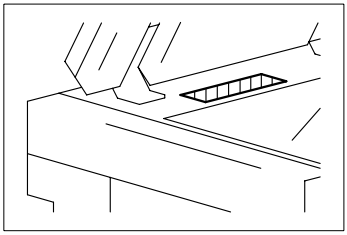
Install the enclosed tray and protective guide at the positions shown in the illustrations.

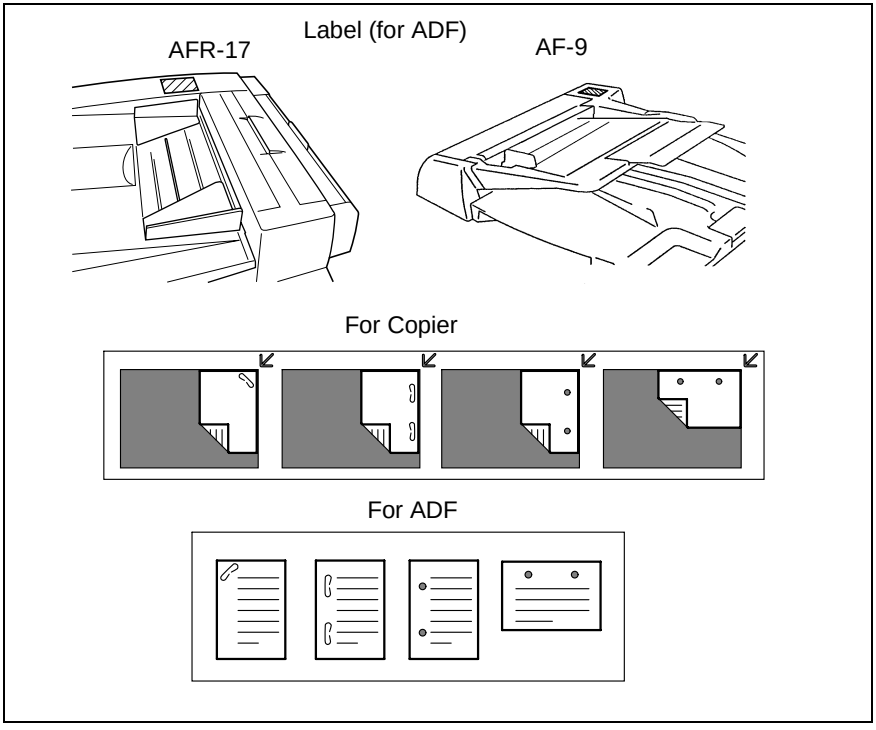


1.9.7 Affixing the Labels

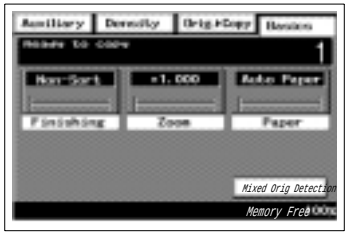
Affix the enclosed operation labels.

1. Label (for the copier)

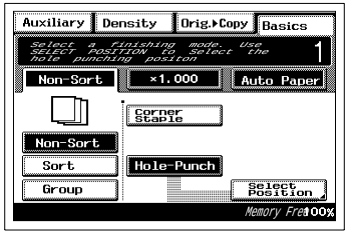




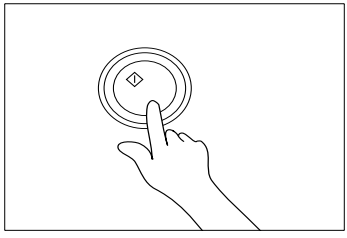
1.9.8 Checking the Hole-Punching Positions (FN-109 only)



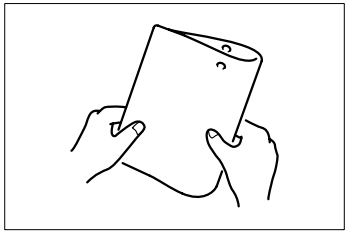
1. Unplug the power cord, and then turn off the copier.
2. Load A4-size paper (in landscape orientation) into tray 1
3. Touch “Finishing.”



4. Touch “Hole-Punch” so that its background changes to black.



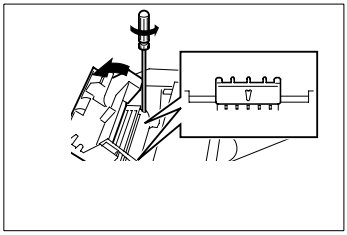
5. Press the Start key.



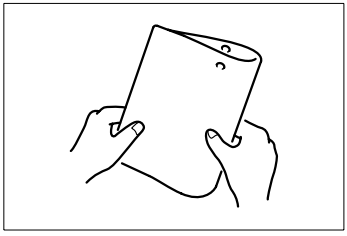
6. Fold the paper that is fed out in half, and check that the punched holes are aligned. Standard position: ±2 mm

   If the punched holes are not at their standard positions, adjust the hole-punching position.

1.9.9 Adjusting the Hole-Punching Positions (FN-109 only)



1. Open the upper cover, and then loosen the hole-punching guide securing screw.
   Move the green slider to adjust the hole-punching position.
2. Tighten the securing screw.
3. Close the upper cover.

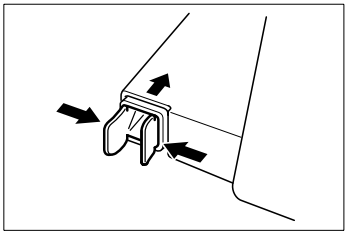


4. Make another test print, and then check that the punched holes are aligned.

NOTE

If the punched holes are not at their standard positions, adjust the hole-punching position.

1.9.10 Removing the Rail



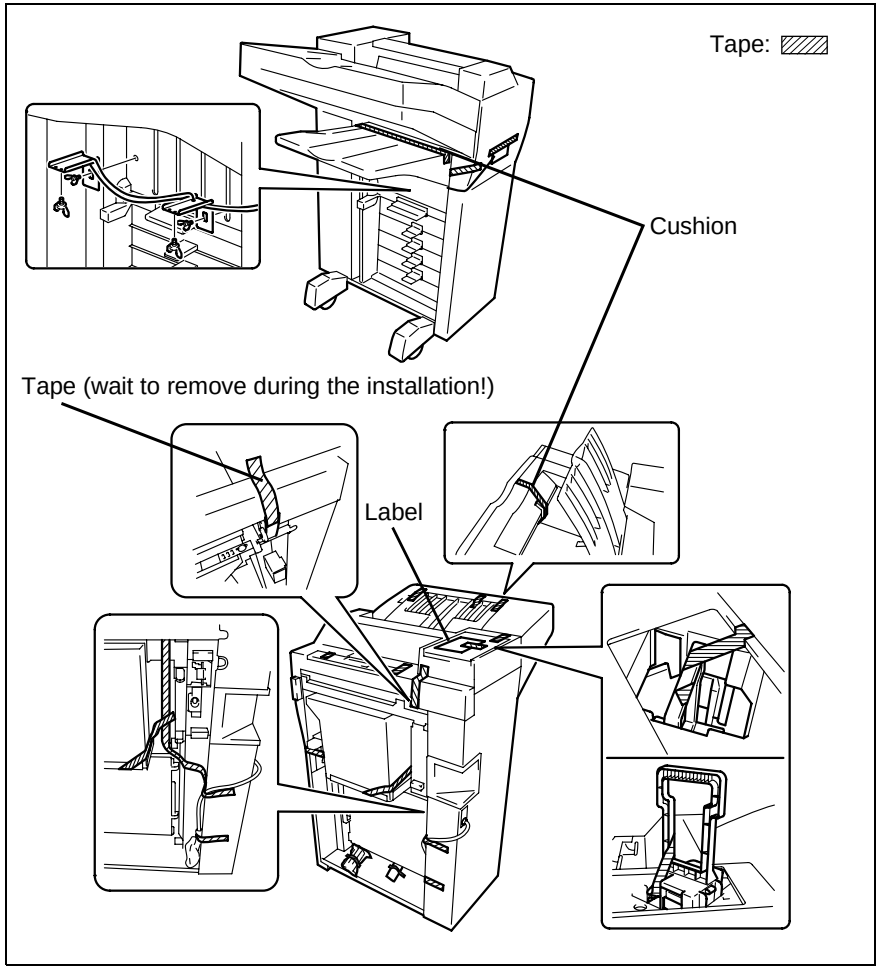
1. Pinch together the rail stoppers on the left side of the finisher to release them.
2. Disconnect the two hookup cords.
3. Remove the horizontal transport unit from the finisher, and then place it on top of the copier.
4. Carefully pull the finisher away from the copier.
5. Slide the rail under the copier, and then remove it from the right side of the copier.

1.10 INSTALLATION FN-504

1.10.1 Unpacking

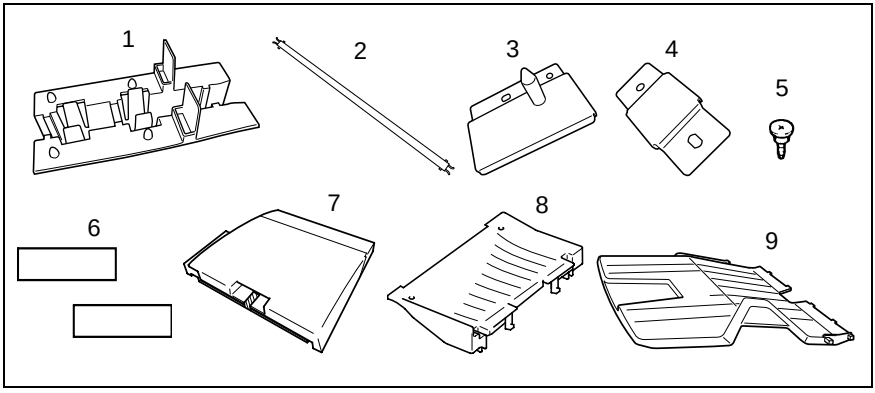
1. Remove the main unit (Finisher), transport unit and accessories from the box.
2. Remove all other plastic wrappings, tape and packing materials.

FINISHER (main unit)



3. Verify that the following parts and accessories are included in the contents of the box.

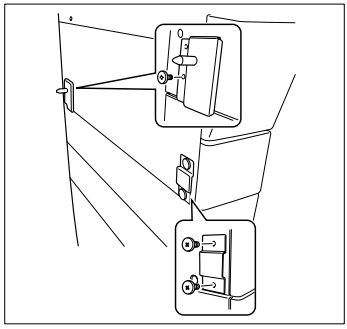
1. Transport unit black guide-rail molding.....1
2. Pipe.....1
3. Finisher set pin 1
4. Magnetic fitting.....1
5. Thumbscrews 3
6. Label 1 (main unit).....1
   Label 2 (ADF) 1
7. Transport unit.....1
8. Feeder attachment.....1
9. Mail-bin 5



NOTE

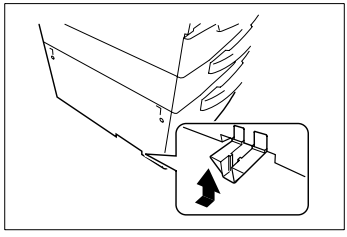
The copier must be configured with at least 5 tiers of paper feed units plus Copy Table, or with 3 tiers and a large capacity unit (or Copy Desk) in order to install the Finisher.
Make sure that the unit is set up on a level surface.
After the setting-up procedures have been completed, do not move the entire system unless absolutely necessary. If for some reason it should become necessary to move the system, first remove the horizontal transport unit and then remove the pipe from both the Finisher and the copier. In this case, first remove the pipe from the Finisher, then remove it from the copier.
After the system has been relocated, perform the following steps again: "Installing the transport unit" and "Attaching the pipe" shown on p. 3.

1.10.2 Attaching the Finisher set pin



Using the thumbscrews (3), attach the Finisher set pin and the magnetic fitting to the left side of the copier as shown in the diagram.

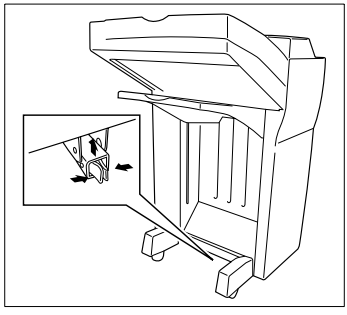
1.10.3 Attaching the pipe



1. Attach the black guide-rail molding to the copier as shown in the diagram.

NOTE

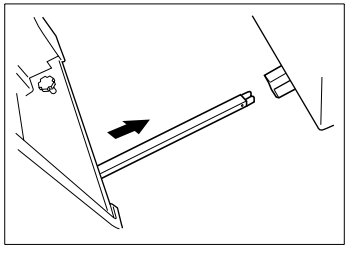
The black guide-rail molding will click into place when properly installed.



2. Insert one end of the pipe into the insertion guide that is attached to the side of the Tray.

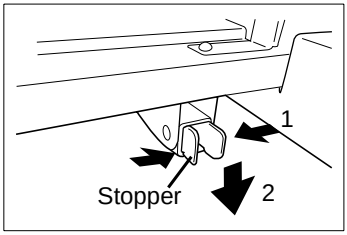
NOTE

The black guide-rail molding will click into place when properly installed.



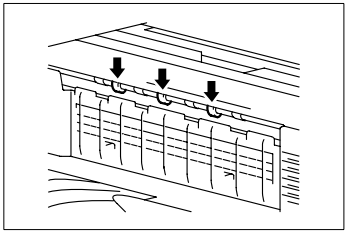
3. Set the finisher with the main unit by inserting one end of the pipe that was used in STEP 2 into the side of the main unit where the feeder attachment is installed.

1.10.4 How to remove the pipe

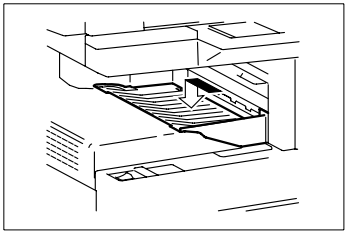


Release the pipe by squeezing the stopper that is located on the left side of the Finisher. Gently push the Finisher to the left. Repeat the procedure to release the stopper on the other side of the main unit and remove the pipe from the main unit.

1.10.5 Installing the transport unit



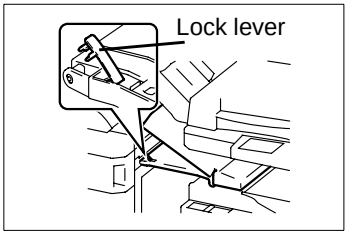
1. Cut off the treaded tires from the Exit Rolls of the machine.



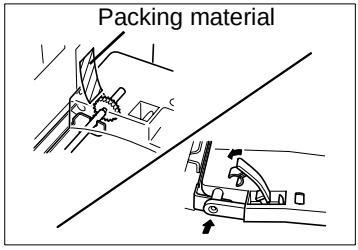
2. Install the feeder attachment of the transport unit onto the main unit.

NOTE

Be sure to align the pins (2) located on the bottom of the feeder attachment with the holes (2) of the main unit during installation.



3. Mount the horizontal transport unit on the exit section of the copier.
4. Open the cover of the horizontal transport unit and fit the shaft of the horizontal transport unit positively into position as illustrated.

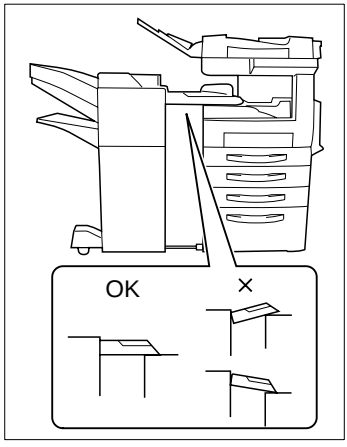


NOTE

Do not secure the Horizontal Transport Unit with the lock lever at this time yet. Also, do not remove the packing material from the coupling gear of the Finisher at this time.

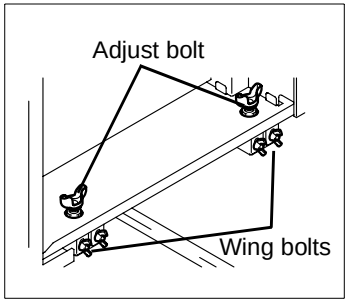
5. Positively engage the gears on the horizontal transport unit with those on the Finisher as illustrated. Then, secure the horizontal transport unit in position with the lock lever and remove the packing material from the coupling gear of the Finisher.

1.10.6 Adjusting the height of the Finisher



1. Separate the Finisher from the copier.
2. Check to make sure that the horizontal transport unit is not leaning.

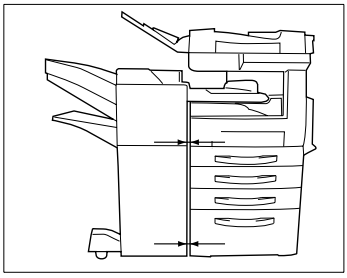
   If the horizontal transport unit appears to be leaning, use the following procedure to adjust the standing position of the unit.



3. Loosen the front and back wing bolts (2) located on the right side of the Finisher and use the adjust bolt to adjust the height.

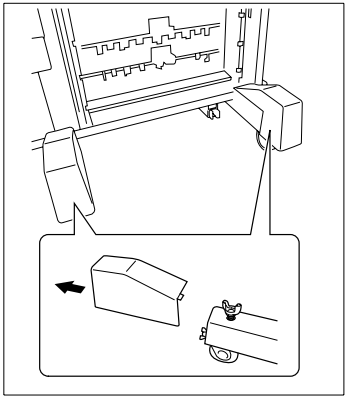
   If the horizontal transport unit appears lower toward the Finisher, turn the adjust bolt clockwise.
   If the horizontal transport unit appears lower toward the copier, turn the adjust bolt counterclockwise.

4. After the height has been adjusted, tighten the front and back wing bolts (2) and set the adjust bolts.

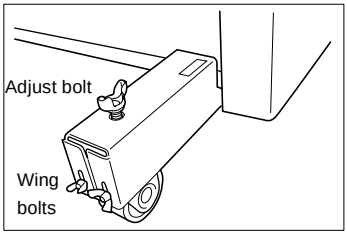


5. Make sure that the space between the Finisher and the copier is the same distance at points (a) and (b).

   If the distance between points (a) and (b) are different, adjust the gap using the following instructions.



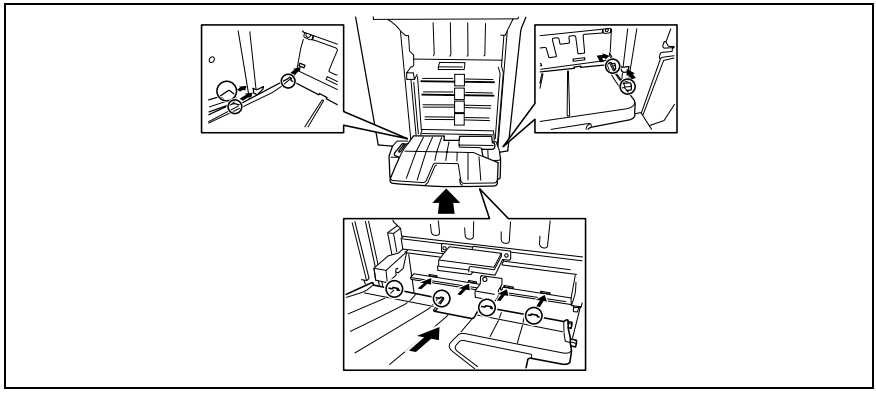
6. Remove the covers from the casters.



7. Loosen the front and back wing bolts (2) and use the adjust bolt to adjust the gap.

   a > b turn the adjust bolt clockwise
   a < b turn the adjust bolt counter clockwise

8. After the gap has been adjusted, tighten the front and back wing bolts (2) and set the adjust bolts.
   Replace the covers onto the casters.

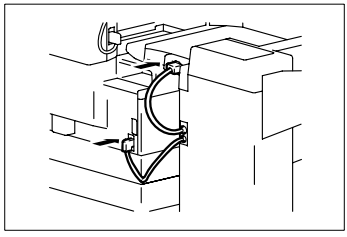


9. Install the mail bin accessories (5) in order from the bottom up, as shown in the illustration.

NOTE

Align the tabs (9) of the mail bin with the holes of the copier (9) to install the mail bin.

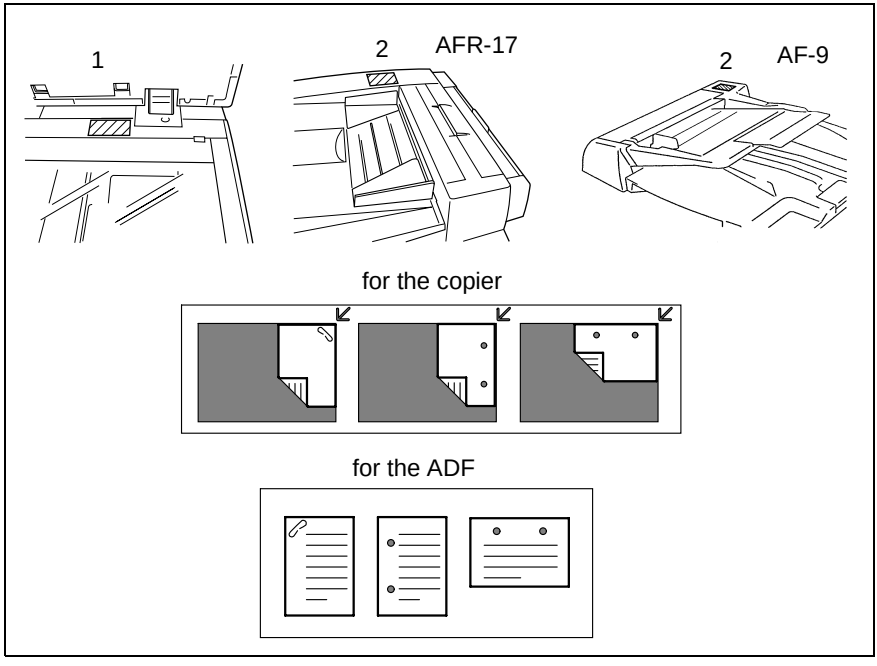
1.10.7 Connecting the cable



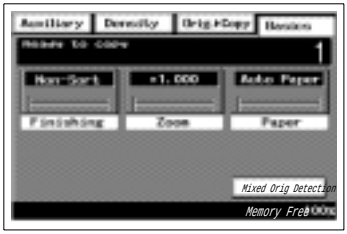
1. Remove the panel cover from the copier unit.
2. Connect two cables to the copier as shown.

1.10.8 Attaching the labels

Attach the labels that came with the Finisher.
1 Label 1 (for the copier)
2 Label 2 (for the ADF)

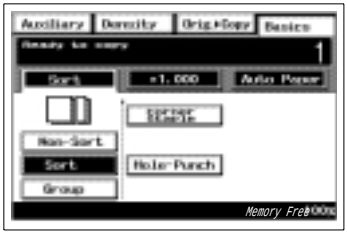


1.10.9 Adjusting the placement of the punch hole

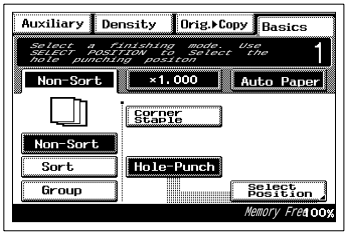


Perform this procedure after the basic position adjustments of the main unit's Tray1 are finished.

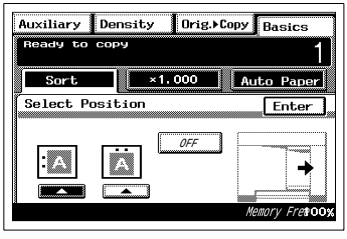
1. Select the A4 horizontal tray.
2. Touch the "Non-Sort" key.



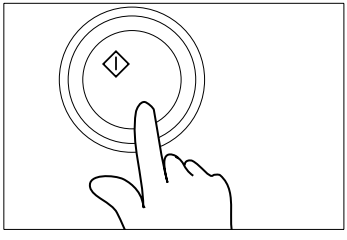
3. Touch the "Hole Punch" key.



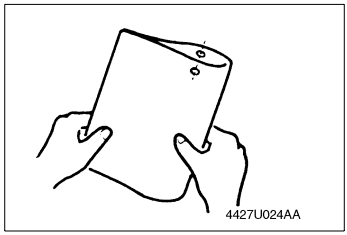
4. Touch "Select Position".



5. Select the position of the punch hole.

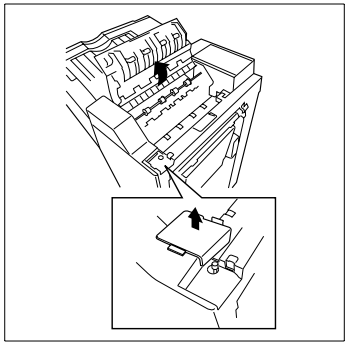


6. Press the Start key.



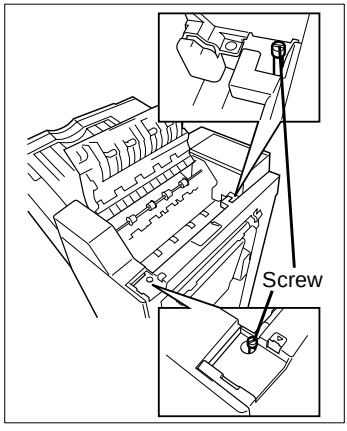
7. Use the paper that is output as a sample to make sure that the punch holes are in the proper position by folding it in half.

   If the holes are not properly aligned, use the following instructions to adjust them.

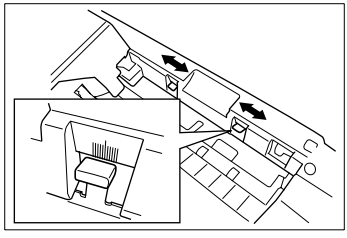


8. Separate the Finisher from the copier.

9. Open the upper door and remove the cover of the Finisher as shown in the illustration.



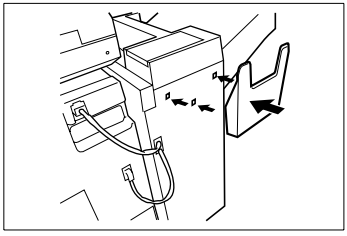
10. Using a coin or similar instrument, loosen the screw as shown in the illustration.



11. Using the green lever, move the hole-punch guide left or right in order to adjust the hole-punch position.
    Use the measuring scale above the green lever as a guide to determine the amount of the adjustment.
12. Retighten the screw and output another sample to check the adjusted position of the hole punch.
13. Replace the cover onto the Finisher.

1.10.10 Attaching the holder for the instruction manual

Place the holder in the position shown in the illustration.



NOTE

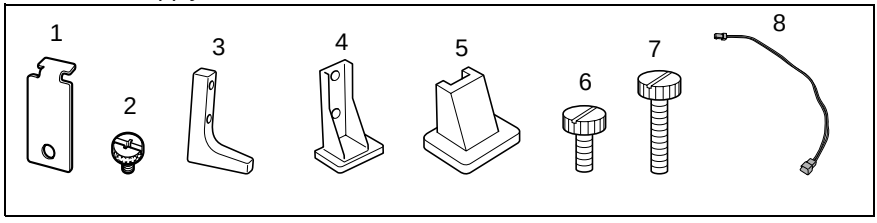
If a holder has already been installed onto the copier, reposition it as shown in the illustration to the left.

1.11 INSTALLATION PF-117

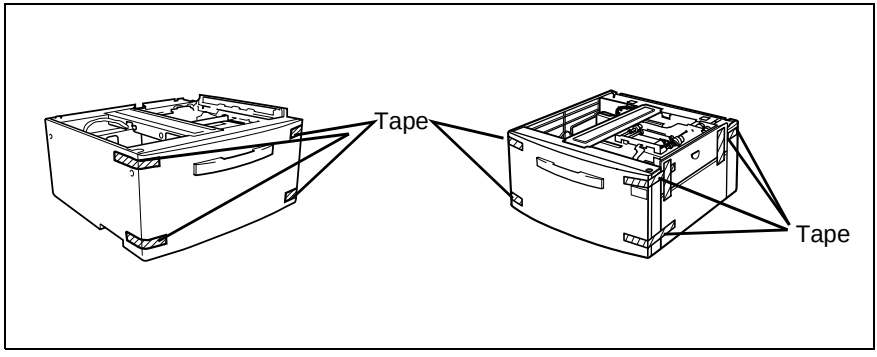
1.11.1 Unpacking

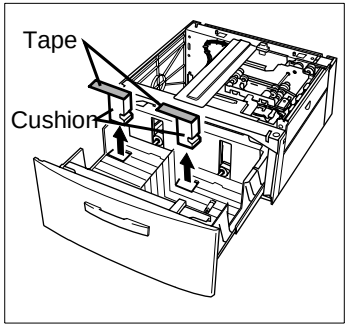
1. Remove the large capacity cabinet from the box and make sure that the following accessories are contained in the box.

1. Fixing plate 4
2. Flat-head screw 4
3. L-shaped stopper 1
4. Stopper 4
5. Stopper cover 2
6. Thumbscrew (short) 4
7. Thumbscrew (long) 2
8. Power supply harness 1



2. Remove the tape from each parts.





3. Pull out the tray and remove the packing material.

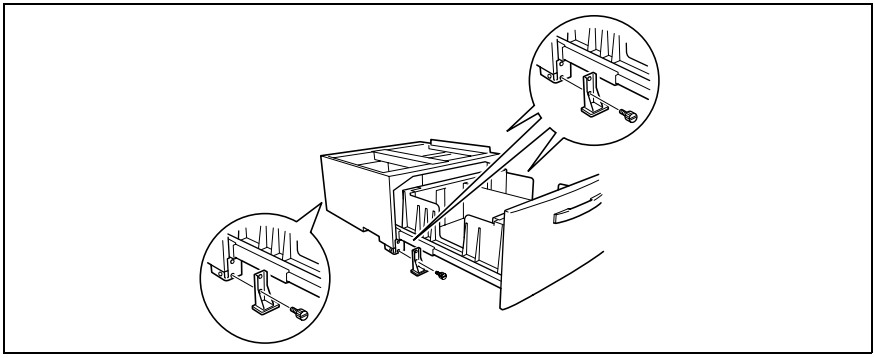
NOTE

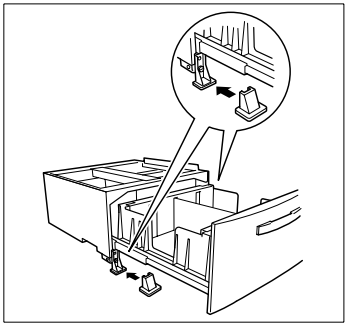
Be sure to remove the packing material before setting the copier onto the Cabinet.

4. Return the tray to its original position.

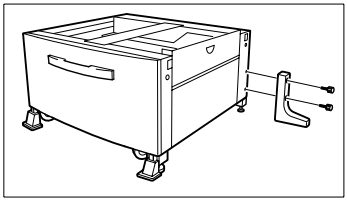
1.11.2 Stopper Installation

1. Use the short thumbscrews to install the 4 stoppers in the positions shown in the figure.



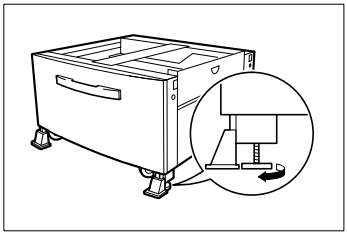


2. Install the stopper covers over the 2 front stoppers.



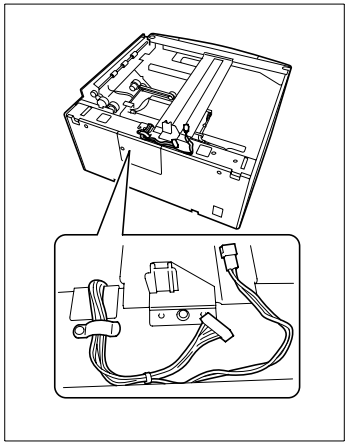
3. Use the Long thumbscrews to install the L-shaped stopper to the rear side of the cabinet.

1.11.3 Support Adjustment



Unscrew the 3 supports on the front and right side of the main unit firmly against the floor.

1.11.4 Cabinet Setup

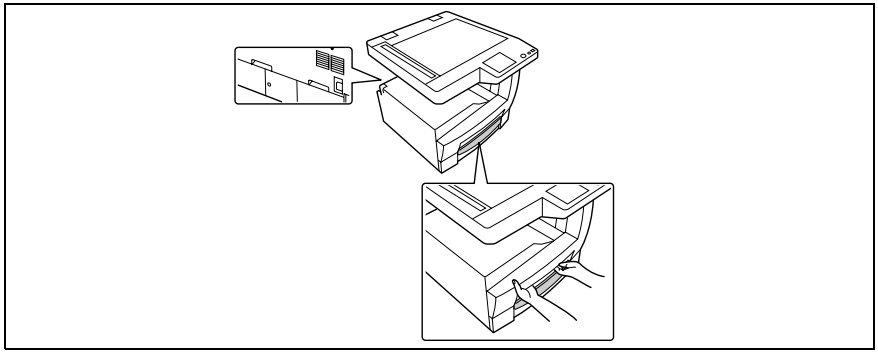


When installing the Large Capacity Cabinet, be sure to mount at least one drawer of Paper Feed Unit on top of the Large Capacity Cabinet.

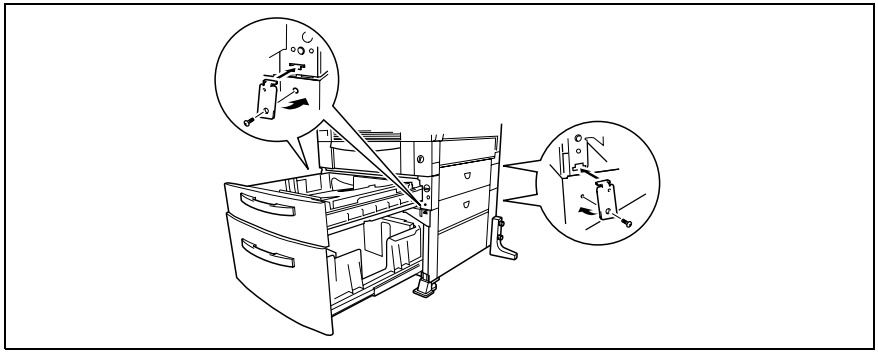
1. Before starting the setting-up procedures, make sure that the harnesses are held in position by the harness holder of the cabinet as illustrated. Place the harnesses in position if they are out of the harness holder.

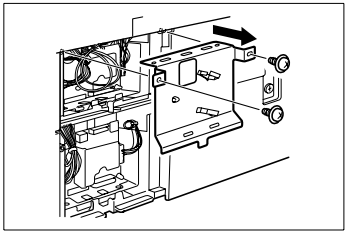
2. Aligning the rubber feet of the Paper Feed Unit with the positioning pins of the Large Capacity Cabinet, mount the unit onto the cabinet.

3. Holding the four carrying handles of the main copier unit, align the rubber feet and setting pins of the optional cassette and set the copier on the cassette.

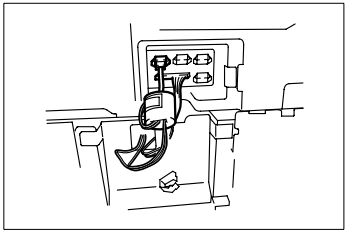


4. Use the flat-head screw and fixing plates to secure the optional cassette and the cabinet.
   Refer to the Optional Cassette Setup Instructions packaged with the cassette for a description of the setup procedures.





5. Remove the connector cover and Bracket from the cassette and connect the relay harness of the large capacity cabinet to the cassette.
6. Install the Bracket.
7. Remove the connector cover from the copier.



8. Connect the connector of Power Supply harness to the copier.

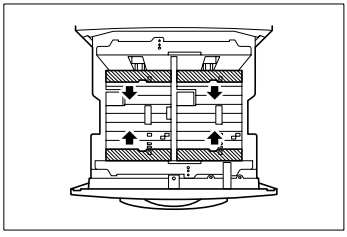
NOTE

If the Power Supply harness cannot reach the copier, add the extra harness enclosed to the Powe Supply harness.
The connector of the P. S. harness can be connected to any receptacle.

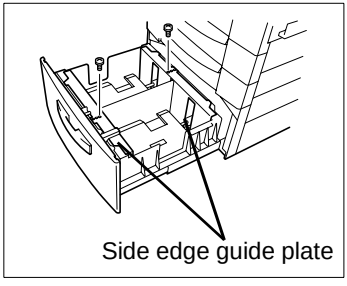
9. Reinstall all covers into positions.

1.11.5 Paper Size Setting

The initial setting is for A4C.



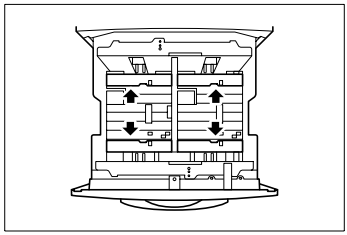
1. Push in the front and rear edges of the trays as far as they will go.



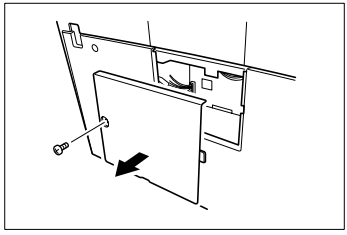
2. Change the positions of the rear and side edge guide plates shown in the figure to adjust the paper size. (One screw in each location.)
   Remove the rear edge guide plates when adjusting the size to Letter C.

NOTE

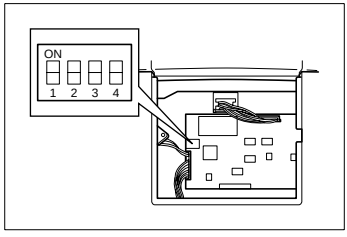
Make sure that the bottom part of the side edge guide plate is inserted into the slot securely.



3. Push out the front and rear edges of the trays until they are flush with the side edge guide plates.



4. Remove the cover on the rear side of the cabinet.

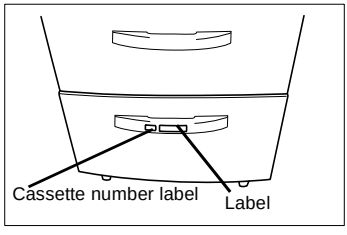


5. Refer to the following chart and set the dip switches to adjust the size:

SW1	1	2	3	4
Letter C	OFF	OFF	OFF	OFF
A4 C	ON	OFF	OFF	OFF
B5 L	OFF	ON	OFF	OFF

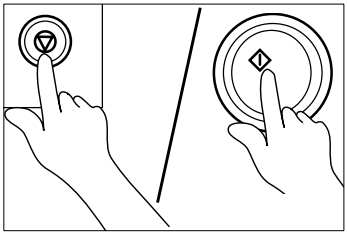
6. Reinstall the cover.

1.11.6 Attaching the paper size label

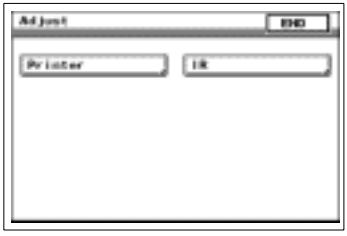


Affix the paper size label and cassette number label included in the main unit's package in the locations show in the diagram.

1.11.7 Registration Adjustment

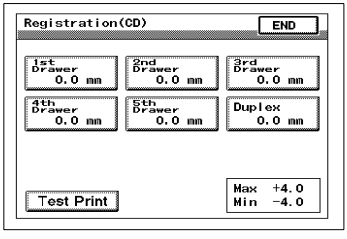


1. Check that the drawer is loaded with A4C or Letter C paper and close it. Select this drawer as the paper source and 1-sided ▶ 2-sided copying.
2. Access the initial, Rep. Mode screen. (Refer to the Service Manual for the procedure.)

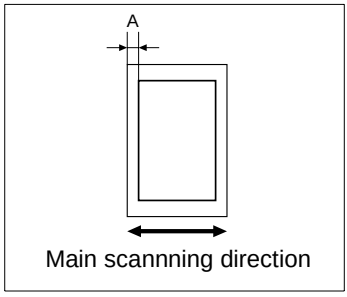


3. Press the stop key and then immediately press the start key.
4. Touch “Printer”.

5. Touch the key for the direction to be adjusted.



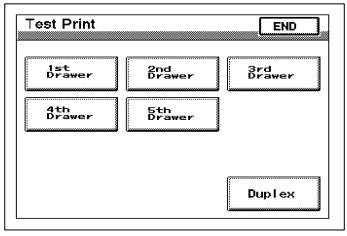
6. Touch “Test Print”.



7. Measure margins A and B on the copy.

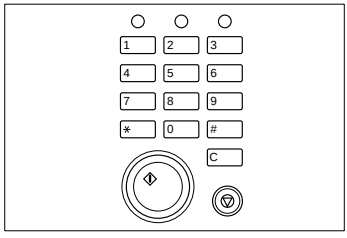
   Standard Values:
   A4C 10.0 mm ±2.0 mm
   Letter C 10.0 mm ±2.0 mm

   If the measured width is not within the standard values, use the following procedure for adjustment.



8. Touch “OK” to complete the setting.

9. Touch the key representing the drawer selected as the paper source.



10. After pressing the Clear key, you can change the value using the key pad.

    Use the * key to change between + and -.

11. Touch “OK” to complete the setting.

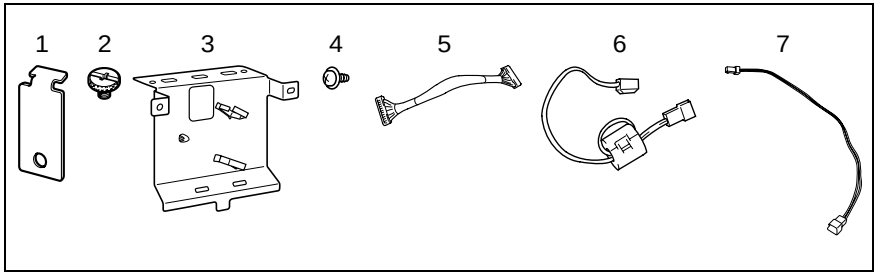
12. Make another test copy and check the image once again.

1.12 INSTALLATION PF-118 / PF-119

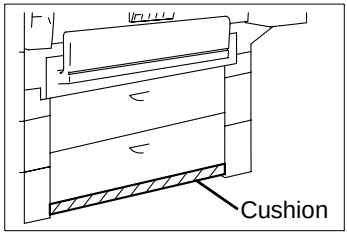
1.12.1 Unpacking

1. Remove the large capacity cabinet from the box and make sure that the following accessories are contained in the box.

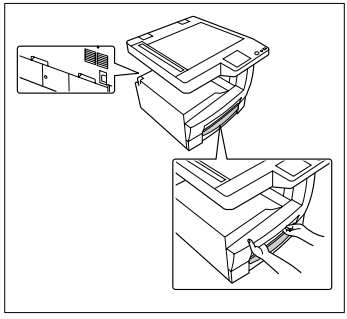
1. Fixing plate 4
2. Flat-head screw 4
3. Bracket 1
4. Screw 2
5. Harness 1
6. Power supply harness 1 (with core) 1
7. Power supply harness 2 1
8. Label (PF-118 only) 1



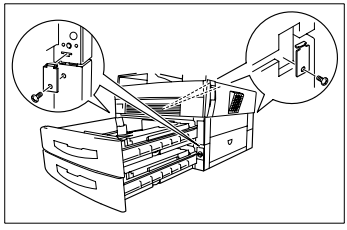
1.12.2 Installation to the Copier



1. Remove the cushion shown below.

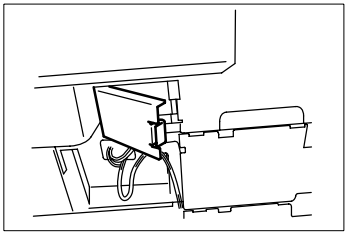


2. Grasp the front and rear handles of the copier and set it on the paper feed unit.

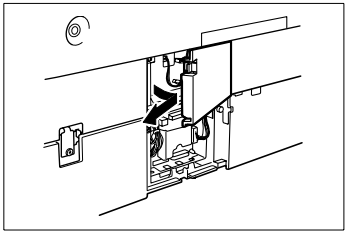


3. Slightly pull out the paper drawers of the copier's paper feed unit and the optional paper feed unit, and then secure the optional paper feed unit to the copier using the enclosed fixing plates and flat-head screws.

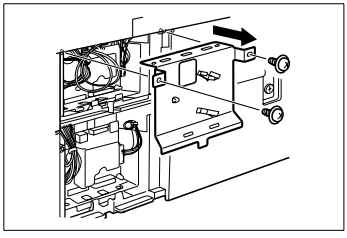
1.12.3 Connecting the Paper Feed Unit to the Copier



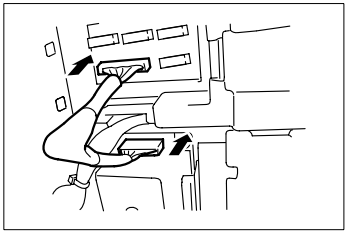
1. Remove the connector cover from the copier.



2. Remove the rear Cover from the Paper Feed Unit.



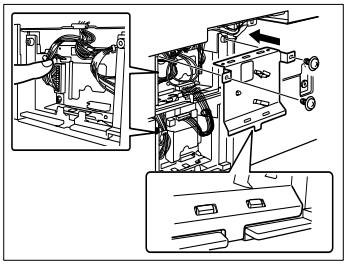
3. Remove the bracket from the Paper Feed Unit.
   (for Di251 and Di351)



4. Connect the Harness furnished with the Paper Feed Unit to the copier and the Paper Feed Unit.

NOTE

Push the Harness into a recess in the rear as illustrated to ensure easy and proper installation of the Bracket in the subsequent step.

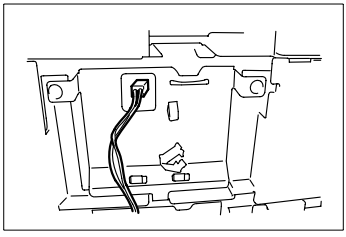


5. Install the Bracket with care not to wedge the Harness connected.

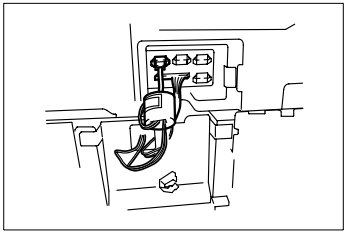
   Accessories:
   Screw..... 2

NOTE

Make sure that the tabs on the base plate of the Paper Feed Unit fit into the slits in the bottom of the Bracket.



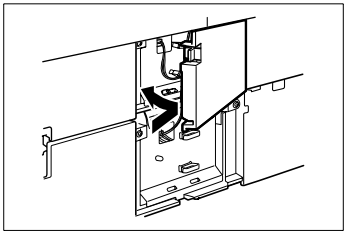
6. Accessing through the hole in the Bracket, connect the connector (white portion) of Power Supply Harness 1 (with a core).



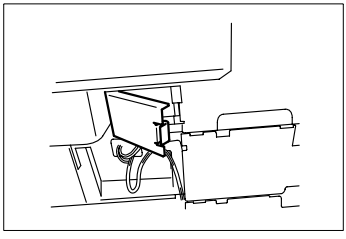
7. Connect the connector (black portion) of Power Supply Harness 1 (with a core) to the copier.

NOTE

The connector of Power Supply Harness 1 (with a core) may be connected to any one of the receptacles on the copier.

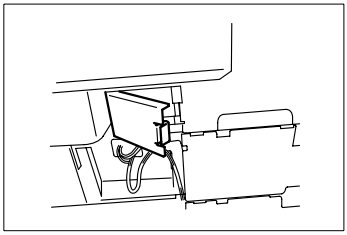


8. Reinstall the rear Cover of each unit.

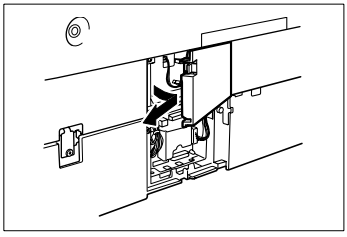


9. Reinstall the connector cover of the copier.

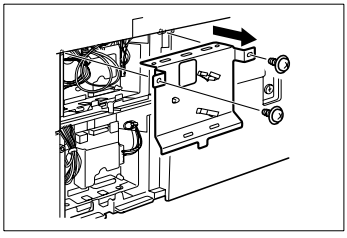
1.12.4 Connecting the Paper Feed Unit to the Paper Feed Unit



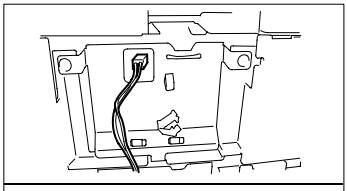
1. Remove the connector cover from the copier.

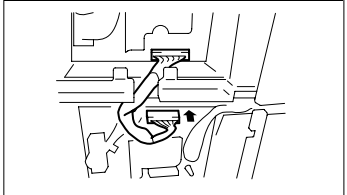


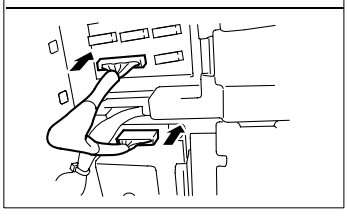
2. Remove the rear Cover from the Paper Feed Unit.



3. Remove the bracket from the Paper Feed Unit.







4. Connect the Harness furnished with the Paper Feed Unit to the Paper Feed Unit.

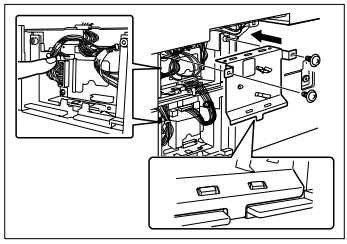
NOTE

Push the Harness into a recess in the rear as illustrated to ensure easy and proper installation of the Bracket in the subsequent step.

Connect the Harness furnished with the Paper Feed Unit to the copier.

NOTE

Push the Harness into a recess in the rear as illustrated to ensure easy and proper installation of the Bracket in the subsequent step.

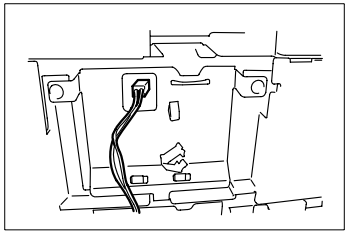


5. Install the Bracket with care not to wedge the Harness connected.

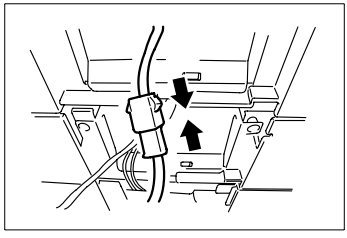
   Accessories:
   Screw..... 2

NOTE

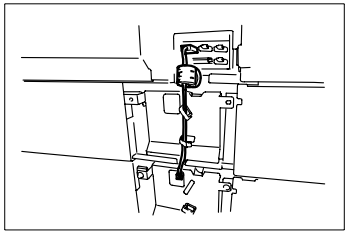
Make sure that the tabs on the base plate of the Paper Feed Unit fit into the slits in the bottom of the Bracket.



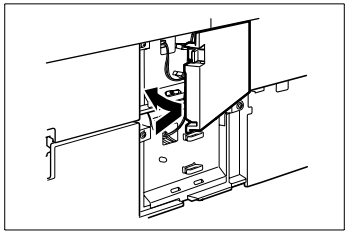
6. Accessing through the hole in the Bracket, connect the connector (white portion) of Power Supply Harness 1 (with a core).



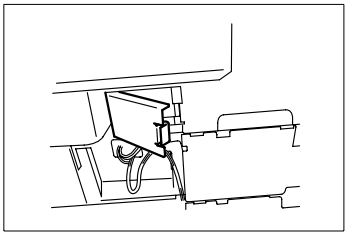
7. Connect the connector (black portion) of Power Supply Harness 1 (with a core) to the connector (black portion) of Power Supply Harness 2 (without core).



8. Connect the connector (black portion) of Power Supply Harness 2 (without core) to the copier.

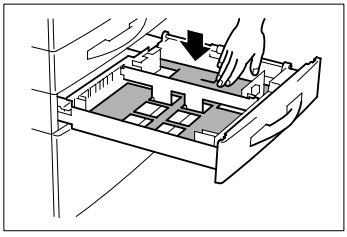


9. Reinstall the rear Cover of each unit.

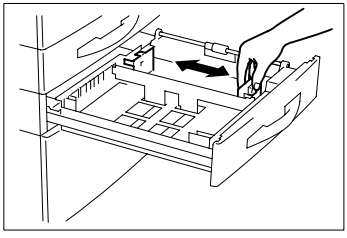


10. Reinstall the connector cover of the copier.

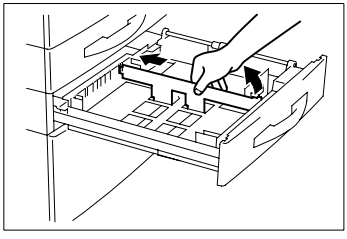
1.12.5 Changing the Paper Size of the Paper Feed Unit

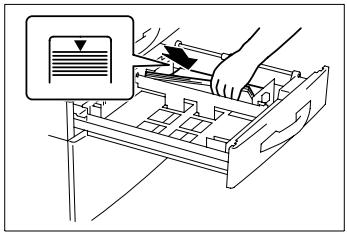


1. Pull out the drawer of the Paper Feed Unit and press down the paper lifting plate until it locks.



2. Adjust the front/rear edge-guide-plates and the trailing-edge guide plate to the size of the paper that will be loaded.



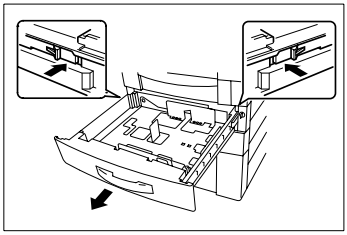


3. Load the paper under the separating fingers fitted to the edge-guide-plates.

NOTE

Do not load so much paper that the top of the stack is higher than the ▼mark.
Be careful not to touch the surface of the paper take-up rollers. If they have been touched, wipe them with a soft, dry cloth.
Be sure the paper is not curled when it is loaded.
Make sure that the front/rear edge-guide-plates are pressed tightly up against the edges of the paper stack.

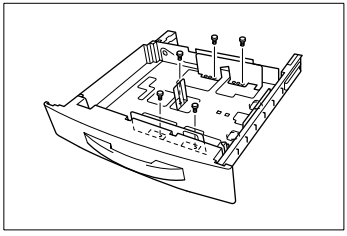
1.12.6 Changing the Paper Size of the Paper Feed Unit (Fixed Cassette)



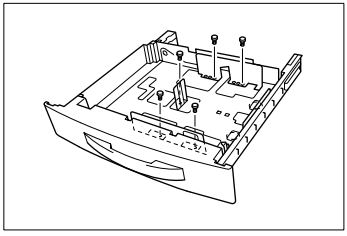
1. While pressing the stops in the direction of the arrows as shown in the figure, pull out the tray of the paper feed unit.

NOTE

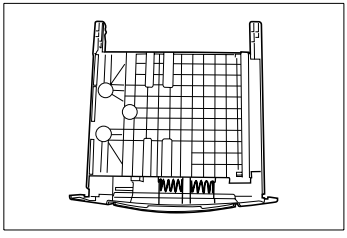
Make sure that the paper lift lock is released.



2. Remove the three edge guides.



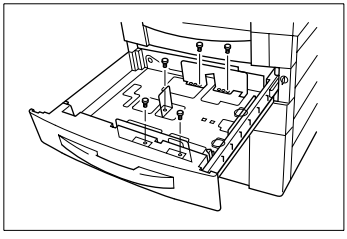
3. Remove two springs under the paper lifting plate.



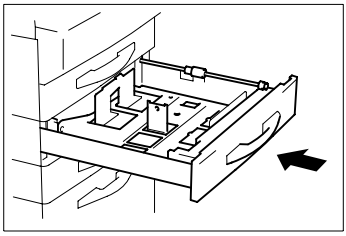
4. Refer to the following chart and replace the two springs according to the desired paper size.

NOTE

The replacement springs are stored in the bottom of the front side of the paper feed unit. Always set the springs so the upper end of the spring fits into the metal clips of the lifting plate and the lower end fits into the cutout in the bottom of the drawer.



Paper Size	Spring	Paper Size	Spring
A3L	Black	FLST/FOLIOT	Silver
B4L	Silver	11x17 L	Black
A4L	Silver	LEGAL L	Silver
A4C	Silver	LETTER L	Silver
11x14 L	Black	LETTER C	Silver



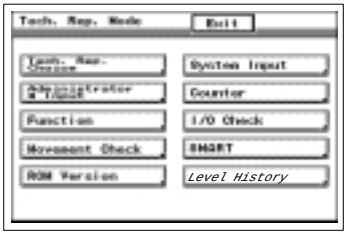
5. Move the edge guides to the desired paper size and secure them.
   After reinstalling the edge guides, recheck the markings in the bottom of the tray to make sure all three guides are set to the desired paper size.

CAUTION

When installing the edge guides, make sure that the fingers fitted to the front/rear edge guides are on top of the paper loaded in the cassette.

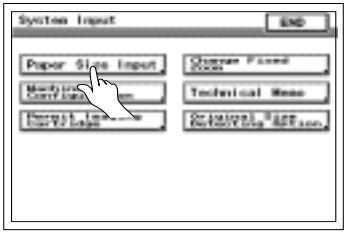
6. Load paper and close the drawer.

1.12.7 Paper Size Input for the Fixed Cassette

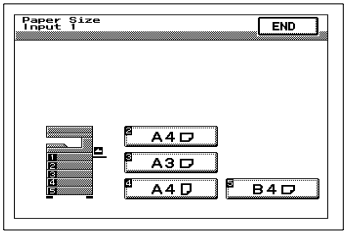


1. Access the service mode screen. (Refer to the service manual for the procedure.)

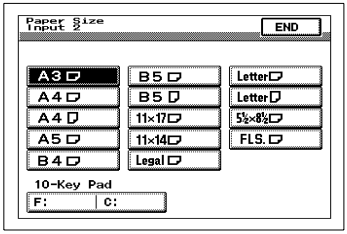
2. Touch “System Input.”



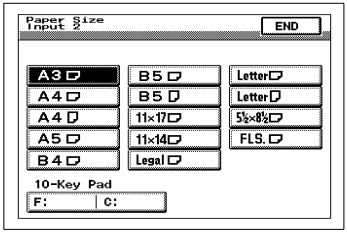
3. Touch “Paper Size Input.”



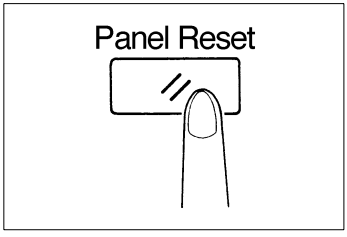
4. Select the position where the paper feed unit is set.



5. Touch the paper size to be set.

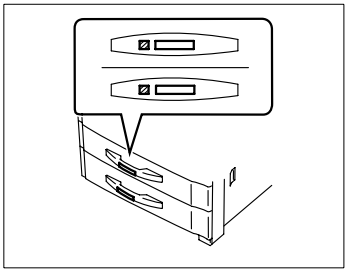


6. Touch “END.”



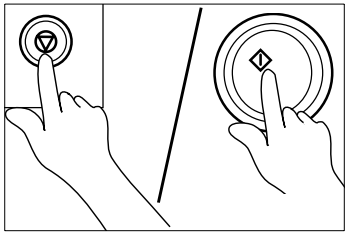
7. Touch “Panel Reset” to display the service mode screen.

1.12.8 Affixing the Labels

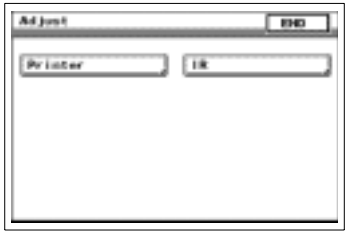


Affix the enclosed label for the paper size at the position shown.

1.12.9 Adjust the Paper Reference Position

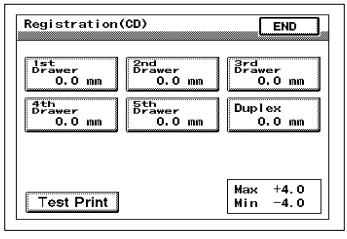


1. Load the paper feed unit with A4 paper.
2. Press the stop key and then immediately press the start key.

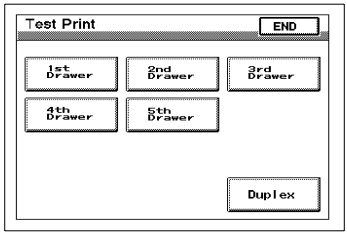


3. Touch “Printer.”

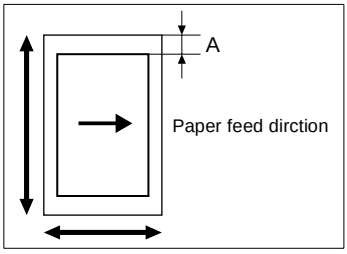
4. Touch “Registration (CD).”



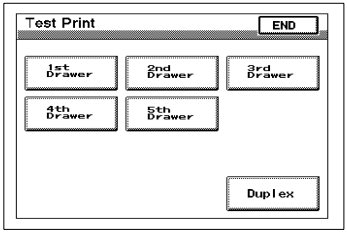
5. Touch “Test Print.”



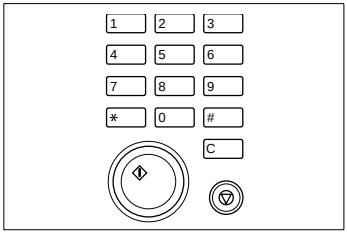
6. Touch the key representing the drawer selected as the paper source, and then press the start key.
   Output the test print.
   Standard Values:
   A4C 10.0 ±2.0 mm
   Letter C 10.0 ±2.0 mm



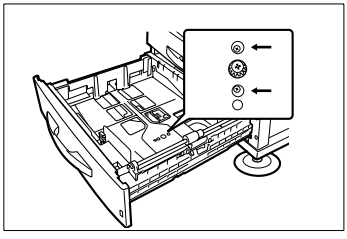
If the measured width is not within the standard values, use the following procedures for adjustment.



7. Touch “OK” to complete the setting.
8. Select the Drawer to be adjusted.



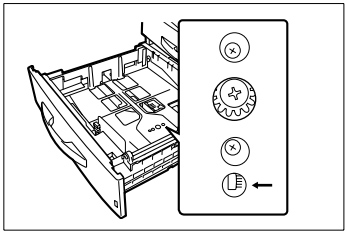
9. Press the Clear key and enter the value from the 10-key pad.
   Pressing the ID key can change the “+” or “-” sign alternately.
10. Make a test print again and check for correct registration.



If the width of the measure margin does not meet its standard width, follow the instructions described below.

For Universal

Open the paper drawer for the Cassette that needs to be adjusted, and then remove all of the paper.

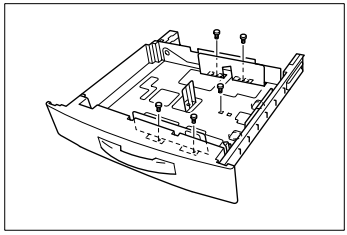


Loosen the two screws of the drawer.
watching the scale on the adjusting plate inside the drawer, move the guide plate as necessary.

After the adjustment has been made, tighten the screws and then produce a test print to check again.

For Fixed Cassette

Open the paper drawer for the cassette that needs to be adjusted, and then remove all of the paper.



Loosen five screws of the drawer. Then, watching the scale on the adjusting plate, move the guide plate as necessary.

After the adjustment has been made, tighten the screws and then produce a test print to check again.

DIS/REASSEMBLY, ADJUSTMENT

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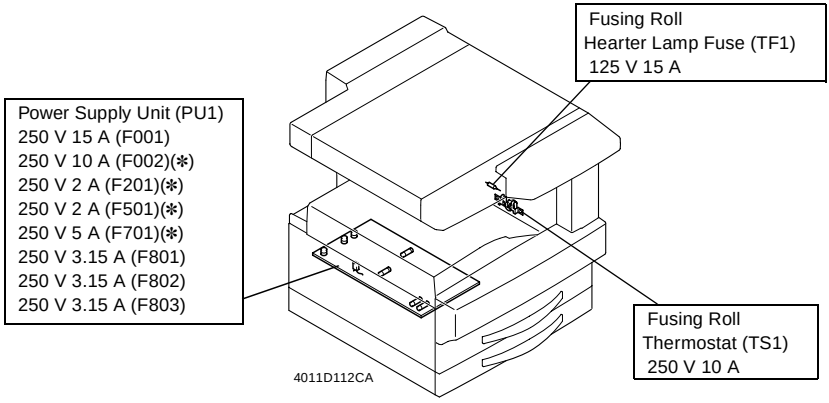
NOTES

- *For the Duplex Unit standard on the 35-cpm copier, see Service Manual for AD-15.*
- *For the Fixed Paper Size Cassette standard on the 35-cpm and 25-cpm copiers, see Service Manual for PF-119.*

1. SERVICE INSTRUCTIONS

1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS



NOTE

- *The fuses marked with *(F002, F201, F501, and F701) prevent a component in the Power Supply Unit, as it becomes defective, from smoking or starting fire. If any of these fuses is blown, replace the Power Supply Unit.*

1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

	25-cpm copier	35-cpm copier
Max. power	5 mW	15 mW
Output wavelength	770-795 nm	775-795 nm

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

1-3. PARTS WHICH MUST NOT BE TOUCHED

(1) Red painted Screws

Purpose of Application of Red Paint

Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and shall not be readjusted, set, or removed in the field.
If it becomes unavoidably necessary to disassemble any of these assemblies and units, disassembly may be done provided that the conditions permitting reassembly are met.
Note also that when two or more screws are used on the part in question, only one representative screw may be marked with red paint.

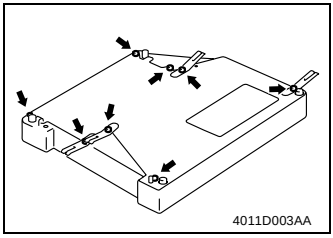
(2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

(3) Other Screws

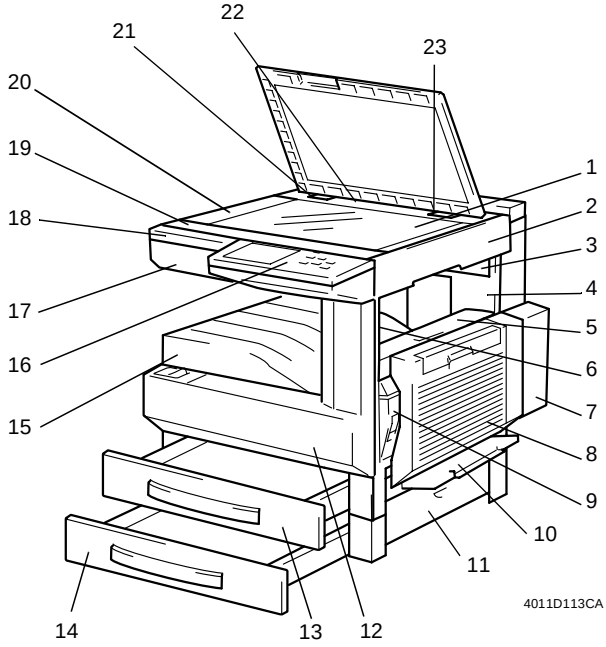
Although not marked with red paint, the following screws must not be loosened or readjusted.

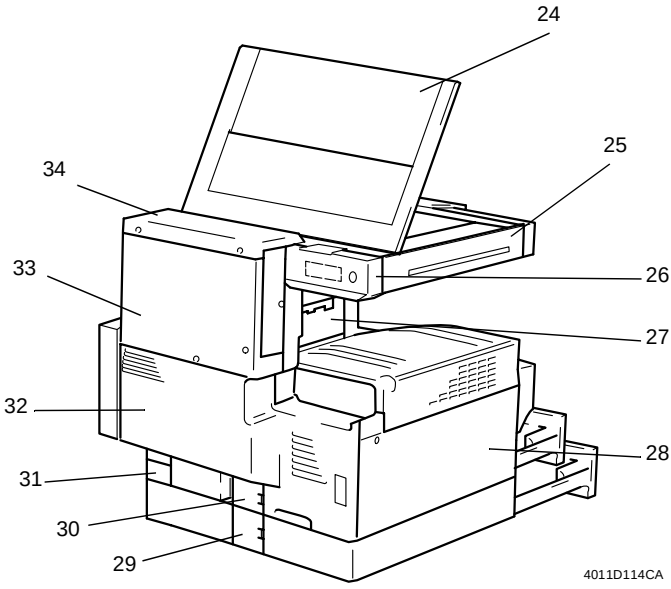
8 screws on the PH Unit Cover



2. DISASSEMBLY/REASSEMBLY

2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES





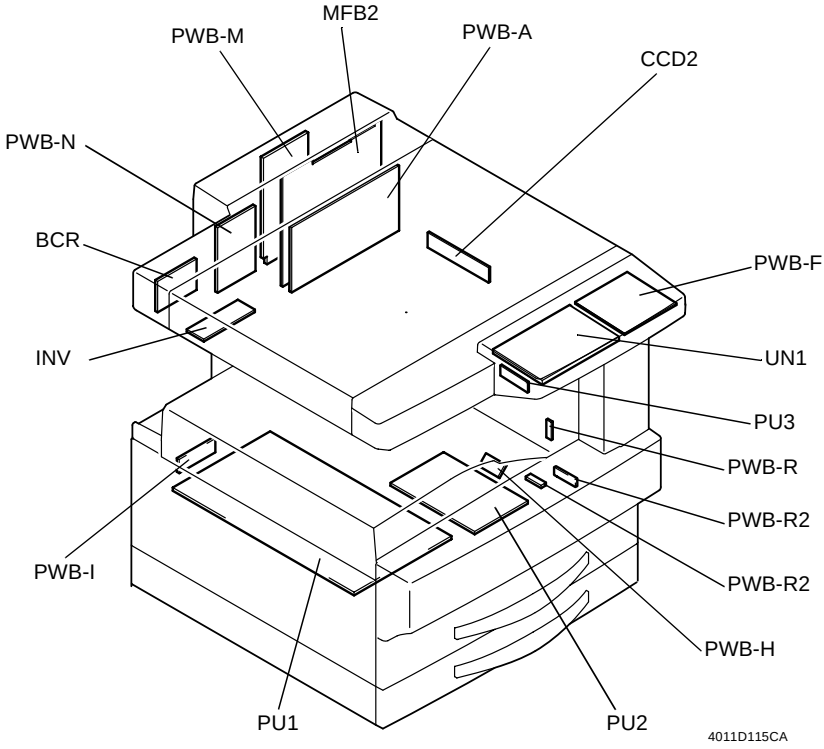
No.	Part Name	Removal Procedure
1	Original Glass	Remove no. 17. → Remove two holding brackets.
2	Right IR Cover	Remove two screws that secure the Right IR Cover.
3	Upper Rear Inside Cover	Unhook one tab and remove the Upper Rear Inside Cover.
4	Lower Rear Inside Cover	Remove no. 13. → Remove no. 3. → Remove the MFB2 Board. → Remove the PWB-A Board Assy. → Open the Manual Bypass Tray. → Open the Exit Cover of no. 5. → Remove three screws that secure the Rear Inside Cover. ✻ For removal of the MFB2 Board Assy and PWB-A Board Assy, see steps 2 through 11 of "(1) Removal of the PH Unit" of "2-5. OPTICAL SECTION."
5	Fusing Unit	☞ D-27
6	Front Inside Cover	Remove no. 11. → Remove no. 5. → Remove two screws that secure the Front Inside Cover.
7	Toner Bottle Cover	Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover and remove the cover.
8	Duplex Unit (✻2)	Remove no. 28. → Remove two connectors. → Remove two screws that secure the Duplex Unit.
9	Side Cover	—
10	Manual Bypass Tray	Remove no. 28. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray.
11	Fixed Paper Size Cassette Side Cover (✻1)	Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame.
12	Front Cover	Slide out no. 12. → Remove three screws that secure the Front Cover.
13	Multi Purpose Cassette	Slide out the Multi Purpose Cassette. → Pushing the tab on the right rail, pull out the cassette.
14	Fixed Paper Size Cassette (✻1)	Slide out the Fixed Paper Size Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette.
15	Upper Cover	Remove two screws that secure the Upper Cover.
16	Control Panel	Remove no. 11. → Remove no. 17. → Remove no. 16. → Remove no. 15. → Remove five screws that secure the Control Panel.
17	Upper Front Cover	Remove no. 11. → Remove no. 17. → Remove no. 16. → Remove six screws that secure the Upper Front Cover.
18	Left Front Upper Cover	Remove no. 17. → Remove two screws that secure the Left Front Upper Cover.
19	Front Holding Bracket	Remove two screw caps. → Remove two screws that secure the Front Holding Bracket.
20	Upper Left Cover	Remove no. 17. → Remove two screws that secure the Upper Left Cover.
21	Left Hinge Cover	Remove one screw that secures the Hinge Cover.
22	Rear Holding Bracket	Remove nos. 19 and 21. → Remove two screws that secure the Rear Holding Bracket.
23	Right Hinge Cover	Remove one screw that secures the Hinge Cover.
24	Original Cover	Pull the Original Cover straight upward.
25	Left IR Cover	Remove two screws that secure the Left IR Cover.
26	Left Rear IR Cover	Remove one screw that secure the Left Rear IR Cover.
27	Exit Lower Cover	Remove the Fusing Unit. → Remove no. 4. → Unhook the two tabs of the Exit Lower Cover and remove the cover.
28	Left Cover	Remove four screws that secure the Left Cover.

No.	Part Name	Removal Procedure
29	Fixed Paper Size Cassette Connector Cover (✻1)	Unhook one tab and remove the Fixed Paper Size Cassette Connector Cover.
30	Connector Cover	Unhook one tab and remove the Connector Cover.
31	Harness Cover	Remove one screw that secures the Harness Cover.
32	Lower Rear Cover	Remove no. 31. → Remove no. 30. → Remove no. 28. → Remove three screws that secure the Lower Rear Cover.
33	Upper Rear Cover	Remove no. 31. → Open no. 7. → Remove three screws that secure the Upper Rear Cover.
34	Rear Upper Cover	Remove two screws that secure the Rear Upper Cover.

✻1: Standard on the 25/35-cpm copier
✻2: Standard on the 35-cpm copier

2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to “PRECAUTIONS FOR HANDLING THE PWBs” contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.



Symbol	Part Name	Removal Procedure
PWB-A	Master Board	Remove the Rear Upper Cover. → Remove the Upper Rear Cover. → Remove the Shield Box. → Remove the MFB2 Board Assy. → PWB-A ✻ For details, see steps 2 through 12 of "(1) Removal of the PH Unit" of "2-5. OPTICAL SECTION."
PWB-F	Panel Board	Remove the Front Cover. → Remove the Front Holding Bracket. → Remove the Left Front Upper Cover. → Remove the Upper Front Cover. → Remove six screws and the Control Panel. → PWB-F
PWB-H	Double Feed Detecting Board (✻)	Slide out the Multi Purpose Cassette. → Remove one screw and the PWB-H Mounting Bracket. → PWB-H
PWB-I	Paper Size Detecting Board	Remove the Harness Cover. → Remove the Rear Cover. → Unhook two tabs and remove the PWB Cover. → PWB-I
PWB-M	ROM/RAM Board	Remove the Rear Upper Cover. → Remove the Upper Rear Cover. → Remove the Shield Box. → Remove PWB-M and PWB-N at the same time. → PWB-M
PWB-N	Network ROM Board	Remove the Rear Upper Cover. → Remove the Upper Rear Cover. → Remove the Shield Box. → Remove PWB-M and PWB-N at the same time. → PWB-N
PWB-R	Fuser Frame Register Board	Remove the Fusing Unit. → PWB-R
PWB-R2	Pre-Transfer Guide Plate Register Board 1	Open the Side Cover and remove the Vertical Transport Unit. → PWB-R2
PWB-R2	Pre-Transfer Guide Plate Register Board 2	Open the Side Cover. → Remove the I/C. → Remove one screw and the PWB Cover. → PWB-R2
BCR	BCR Board	Remove the Left Rear IR Cover. → Remove three screws and the Harness Cover. → BCR
MFB2	MFB2 Board	Remove the Rear Upper Cover. → Remove the Upper Rear Cover. → Remove the Shield Box. → Remove PWB-M and PWB-N. → MFB2 ✻ For details, see steps 2 through 9 of "(1) Removal of the PH Unit" of "2-5. OPTICAL SECTION."
CCD2	CCD2 Board	☞ D-16
INV	Inverter Board 1	Remove the Original Glass. → INV
PU1	Power Supply Unit	Remove the Upper Cover. → Remove the Front Cover. → Remove the Left Cover. → Remove the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1
PU2	High Voltage Unit	Open the Side Cover. → Remove the I/C. Remove two screws and the High Voltage Unit Cover. → PU2
PU3	Inverter Board 2	Remove the Front Cover. → Remove the Upper Front Cover. → Remove the Front Holding Bracket. → Remove the Left Front Upper Cover. → Remove six screws and the Control Panel. → PU3
UN1	Touch Panel	Remove the Front Cover. → Remove the Upper Front Cover. → Remove the Front Holding Bracket. → Remove the Left Front Upper Cover. → Remove six screws and the Control Panel. → UN1

✻: Only on the 35-cpm copier

2-3. MAINTENANCE SCHEDULE

- To keep the copier in good operating condition and ensure an extended service life of the copier, it is recommended that the maintenance jobs described in this schedule be carried out.
- Carry out the maintenance jobs according to the PM Counter values.

	PM Parts	Maintenance Cycle (K)		Part No.	Qty	Ref. Page	PM Counter
		Clean	Replace				
Paper Take-Up/Transport Section	Paper Take-Up Roll	—	150	1164-3001-XX	1	☞ D-10	1st Drawer
	Paper Dust Remover Assy	75	150	1165-0756-XX	1	☞ D-10	Other PM Parts 1, Other PM Parts 2
	Synchronizing Roller bushings (upper and lower)	—	900	1164-3509-XX	4	☞ D-11	(✻2)
	Synchronizing Roller gears (upper)	—	900	1164-3515-XX	1	☞ D-11	
	(lower)	—	900	1164-3508-XX	1	☞ D-11	
	Side Cover/Ventilation Fan Section	75	—	—	—	☞ D-12	Other PM Parts 1
Optical Section	Mirrors and lens	150	—	—	—	☞ D-17	IR 2
	Scanner rails/bushings	75	—	—	—	☞ D-16	IR 1
	Original Glass	75	—	—	—	☞ D-17	
Image Transfer Section	Image Transfer Roller Assy	—	150	4011-0313-XX	1	☞ D-24	Other PM Parts 2
	Comb Electrode	75	—	—	1	☞ D-24	Other PM Parts 1
	Pre-Transfer Guide Plate	75	—	—	1	☞ D-25	
	Ozone Filter (Europe)	—	150	4011-2032-XX	1	☞ D-25	Other PM Parts 2
	(Except Europe)	—	300	4011-2031-XX	1	☞ D-25	Other PM Parts 3
Developing Section	Imaging Cartridge					☞	I/C Life 1
	(25-cpm copier)	—	(✻1)	—	—	☞ D-26	
	(35-cpm copier)	—	(✻1)	—	—	☞ D-26	
Fusing Section						☞	Fusing Unit
	(100-V series 25-cpm copier)	—	300	4012-0321-XX	1	☞ D-27	
	(200-V series 25-cpm copier)	—	300	4012-0322-XX	1	☞ D-27	
	(100-V series 35-cpm copier)	—	300	4011-0321-XX	1	☞ D-27	
	(100-V series 35-cpm copier)	—	300	4011-0322-XX	1	☞ D-27	

✻1: When I/C Life is detected
I/C Life is a value of the period of time during which I/C has been energized, converted to the number of copies made in the standard copying mode, which differs from the actual number of copies made. The following table lists the life counter values of different models based on the standard copying mode.

Model	Copying Mode	Life Counter
25-cpm copier	A4C, 3 copies per job	67000
35-cpm copier	A4C, 4 copies per job	72000

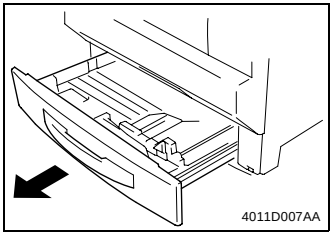
✻2: Controlled with the Total Counter.

NOTES

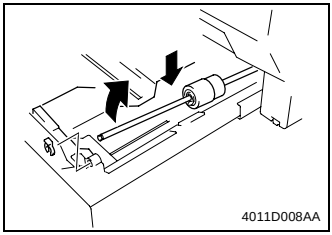
- *K = 1,000 copies*
- *The contents of this maintenance schedule are subject to change without notice.*
- *For part numbers, see Parts Manual and Parts Modification Notice.*

2-4. PAPER TAKE-UP/TRANSPORT SECTION

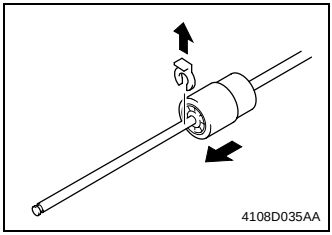
(1) Removal of the Paper Take-Up Roll



1. Slide out the Multi Purpose Cassette.

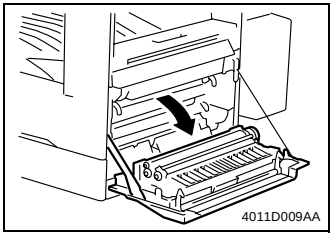


2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

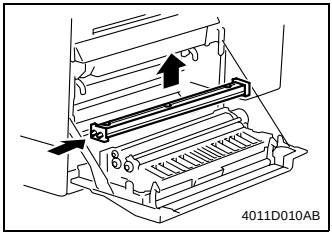


5. Snap off one C-clip and remove the Paper Take-Up Roll.

(2) Removal of the Paper Dust Remover Assy

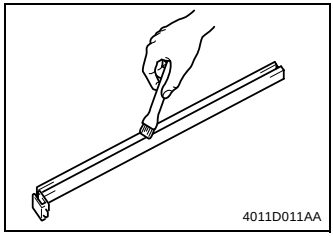


1. Open the Side Cover.



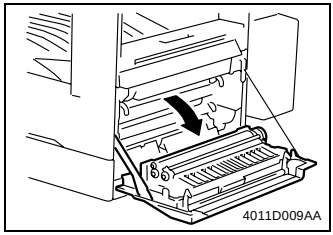
2. Remove the Paper Dust Remover Assy.

(3) Cleaning of the Paper Dust Remover Assy

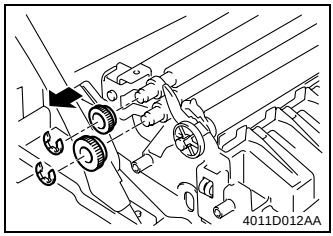


1. Remove the Paper Dust Remover Assy.
2. Using a brush, whisk dust and dirt off the Paper Dust Remover Assy.

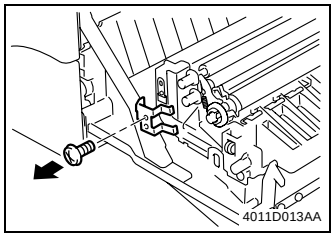
(4) Removal of the Synchronizing Roller Gear and Synchronizing Roller Bushing



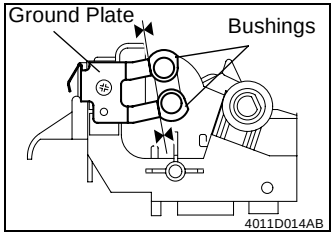
1. Open the Side Cover.



2. Snap off two retaining rings E type and the upper and lower Synchronizing Roller gears.

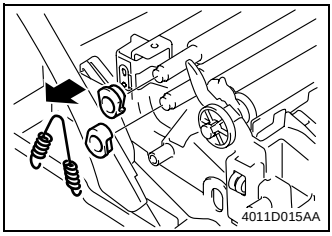


3. Remove one screw and the ground plate.



NOTE

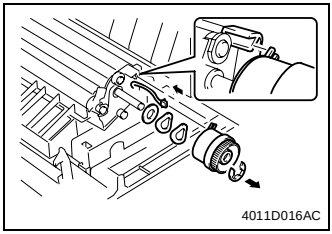
- *When reinstalling the ground plate, make sure that the ground plate is in contact with the side faces of the bushings.*



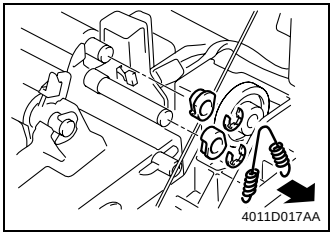
4. Remove one spring and the upper and lower Synchronizing Roller bushings.

NOTE

- *When reinstalling the bushings, make sure that the flanges of the bushings are on the outside.*



5. Snap off one retaining ring E type, unplug one connector, and remove the Synchronizing Clutch.
6. Remove one washer and two wave washers.

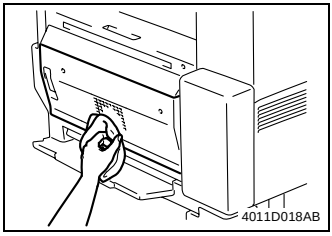


7. Unhook one spring, snap off two retaining rings E type, and remove the upper and lower Synchronizing Roller bushings.

NOTE

- *When reinstalling the bushings, make sure that the flanges of the bushings are on the outside.*

(5) Cleaning of the Side Cover



1. Using a soft cloth dampened with alcohol, wipe the Side Cover.

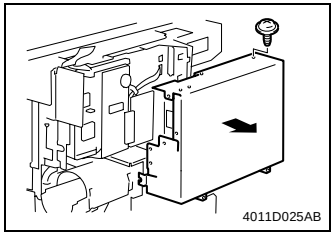
2-5. OPTICAL SECTION

(1) Removal of the PH Unit

NOTES

- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*

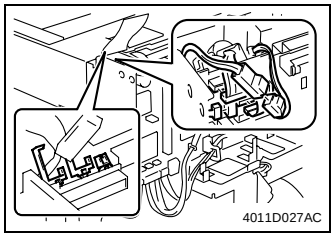
1. Remove the Upper Cover, Front Cover, Left Cover, Upper Rear Cover, Lower Rear Cover, and Left Hinge Cover.



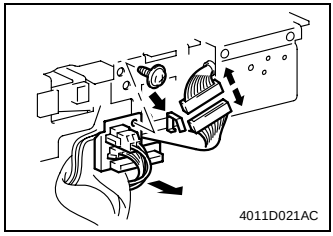
2. Remove screws (14 or 12) and the Shield Cover.

NOTE

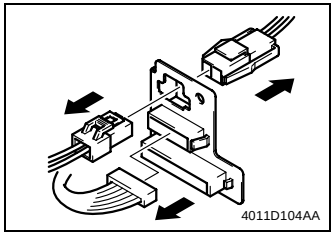
- *The number of screws used differs according to the applicable marking area.*
- *The illustration shows only one representative screw. Be sure to remove all screws that secure the Shield Cover.*



3. Unplug four connectors of the MFB2 Board.
4. Remove the harness from two cord clamps and one wiring saddle.

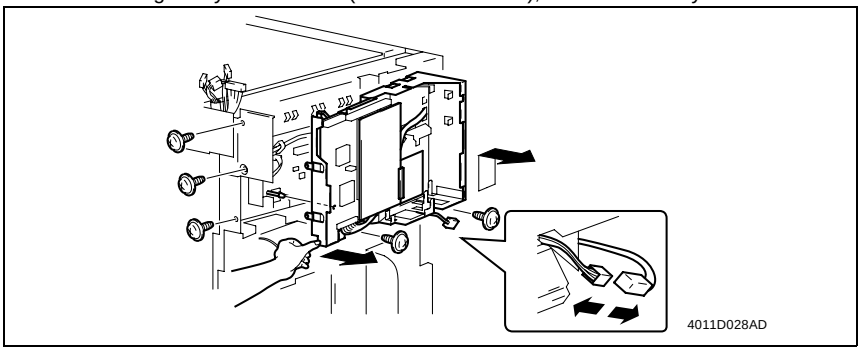


5. Unplug one connector of the hookup harness and remove the harness from one wiring saddle.
6. Remove one screw and the connector mounting bracket.



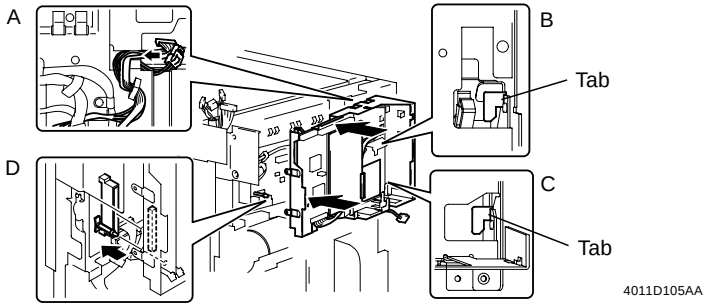
7. Unplug three connectors from the connector mounting bracket.

8. Unplug one connector.
9. Remove five screws and one PWB support. Then, holding the MFB2 Board Assy at the slit with a finger of your left hand (see the illustration), remove the assy.

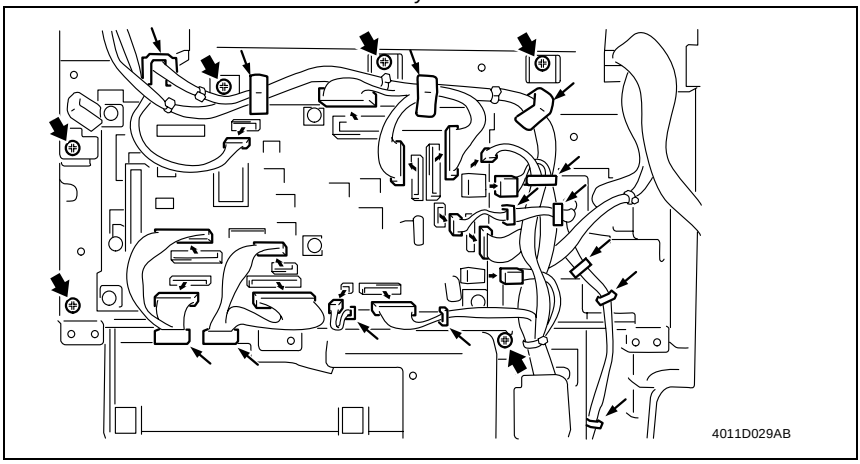


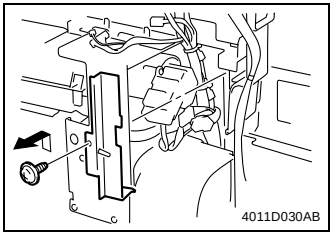
NOTES

- *When reinstalling the MFB2 Board Assy, push the harness inside the frame to ensure that it will not interfere with other parts. (Part A of the illustration)*
- *When reinstalling the MFB2 Board Assy, hook two tabs and press the tab marked with C up against the mating part. (Parts B and C of the illustration)*
- *When connecting the connector to the Master Board and fixing the MFB2 Board Assy to the PWB support as part of the procedure of reinstalling the assy, position the assy as you look at it from the left-hand side of the assy. (Part D of the illustration)*

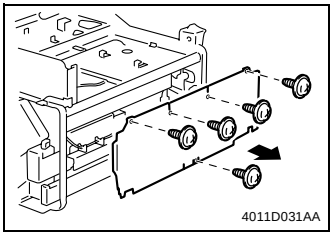


10. Remove all connectors of PWB-A.
11. Remove the harness from six cord clamps, six wiring saddles, and two edge covers.
12. Remove six screws and the PWB-A Assy.

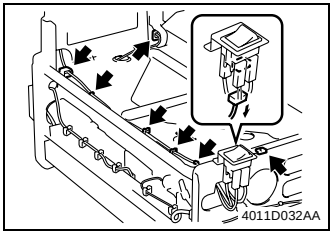




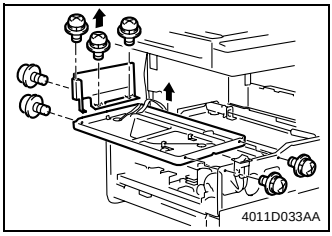
13. Remove one screw and the Flexible Harness Guide.



14. Remove five screws and the Reinforcement Bracket.

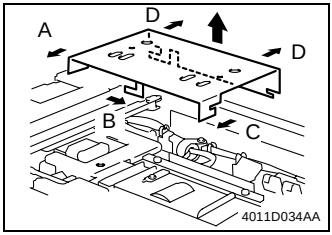


15. Unplug one connector from the Power Switch.
16. Remove the harness from one edge cover, four wiring saddles, and two cord clamps.

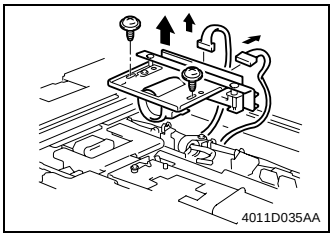


17. Remove three screws and the mounting bracket.
18. Remove four screws and the PH Unit.

(2) Removal of the CCD Unit



1. Remove the Original Glass.
2. Unhook the tabs of the cover in order of A, B, C, and D and remove the cover.

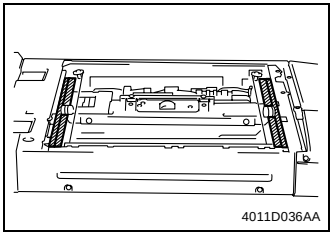


3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.

NOTES

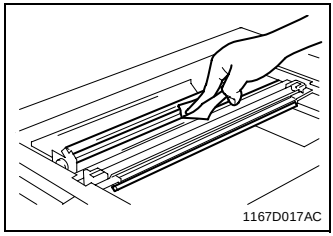
- *When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)*
- *Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).*

(3) Cleaning of the Scanner Rails/Bushings



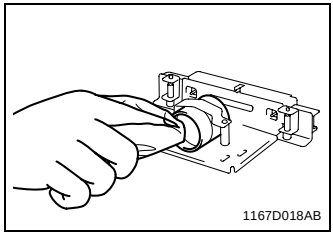
1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

(4) Cleaning of the Mirrors



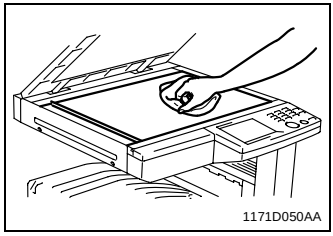
1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

(5) Cleaning of the Lens



1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

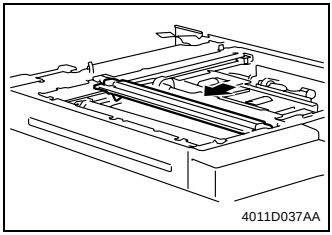
(6) Cleaning of the Original Glass



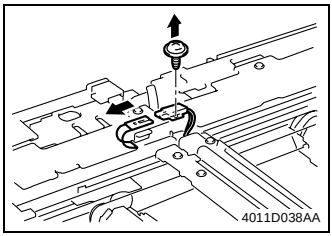
1. Wipe clean the Original Glass with a soft cloth.

(7) Removal of the Scanner

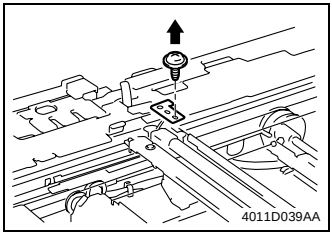
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



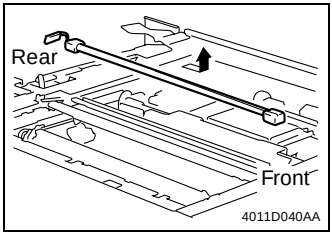
3. Move the Scanner to the location shown in the illustration.



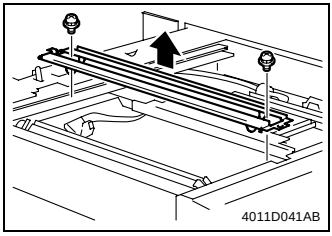
4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.



6. Remove one screw and the Lamp Fixing Bracket.



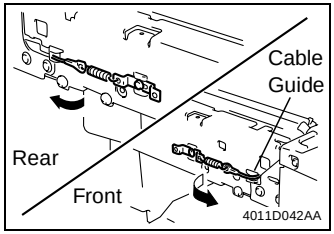
7. Slide the Exposure Lamp to the front and remove it.



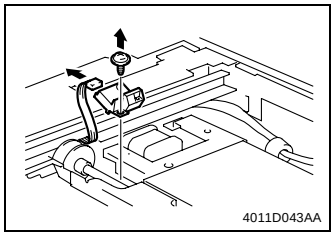
8. Remove two screws and the Scanner.

(8) Removal of the Scanner Drive Cables

1. Remove the Original Glass.
2. Remove the Scanner.
3. Remove the Left Upper Cover and Left IR Cover.

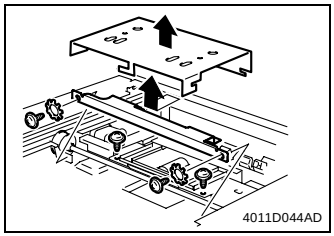


4. Unhook the spring at the end of the cable from the front hook and remove the cable guide.
5. Unhook the spring at the end of the cable from the rear hook.



6. Remove one screw, unplug one connector, and remove the Original Size Detecting Sensor.

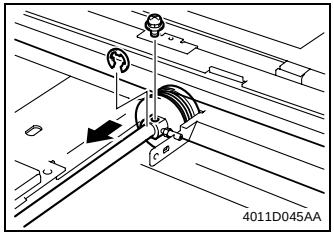
✻ Option for the inch areas



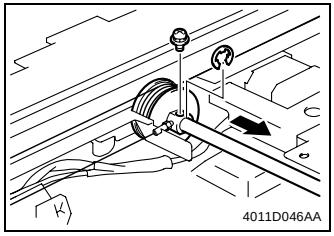
7. Remove the cover.

✻ See step 2 of "(2) Removal of the CCD Unit" of "2-5. OPTICAL SECTION."

8. Remove four screws and the Reinforcement Bracket.

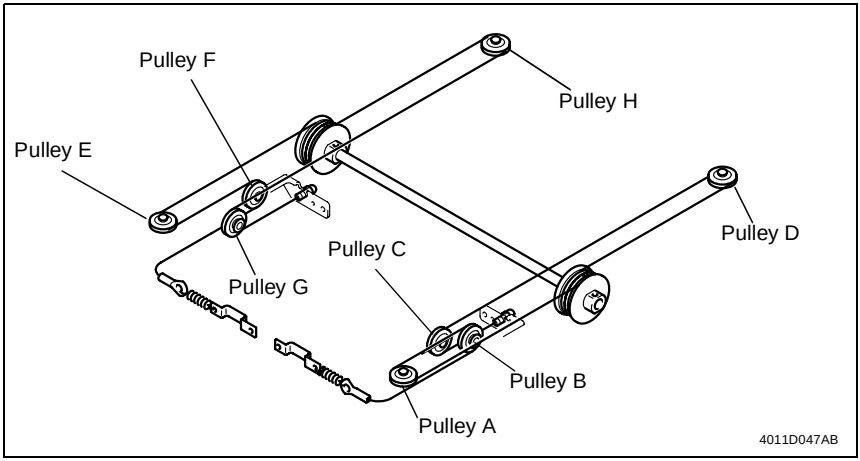


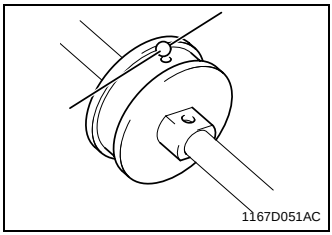
9. Snap off one retaining ring E type and remove one mounting screw from the front pulley and slide the pulley to the rear.



10. Snap off one retaining ring E type and remove one mounting screw from the rear pulley and slide the pulley to the front.
11. Remove the Scanner Drive Cable, hook end first.

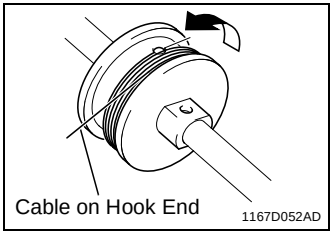
(9) Winding of the Scanner Drive Cables



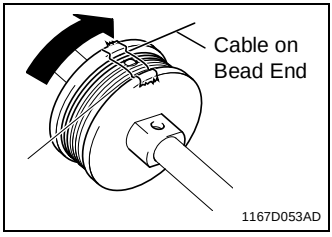


Front

1. Position the round bead of the cable (silver) at the location shown in the illustration.



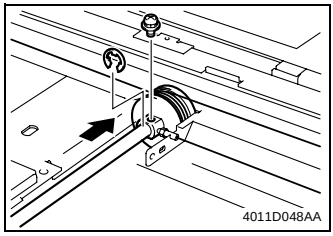
2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.



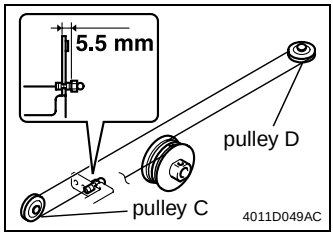
3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

NOTE

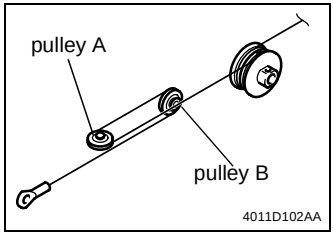
- *Make sure that no part of the cable rides on the other.*



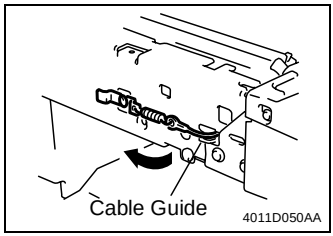
4. Slide the pulley to the front and fit one retaining ring E type.
5. Pushing the pulley tightly up against the retaining ring E type, secure the pulley with one screw.



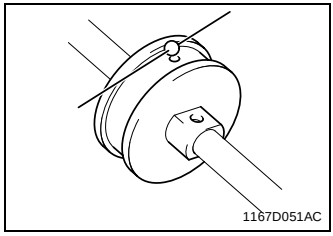
6. Wind the fixed bead end of the cable around pulley D and pulley C and fit the fixed bead at a position about 5.5 mm from the Scanner rail.



7. Wind the hook end of the cable around pulley A and pulley B.

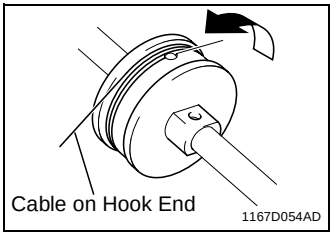


8. Install the cable guide, fit the hook end of the cable into the groove in the cable guide, and hook the spring.

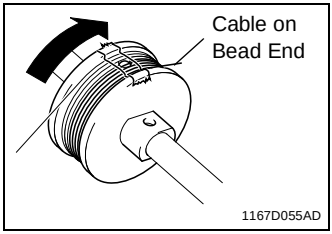


Rear

9. Position the round bead of the cable (black) at the position shown in the illustration.



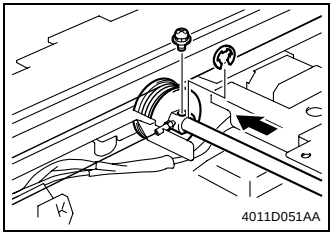
10. Wind the hook end of the cable two turns counterclockwise from the front to the rear.



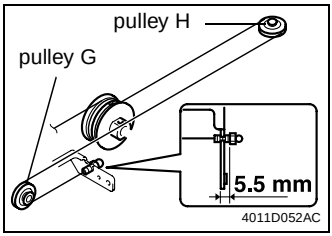
11. Wind the bead end of the cable four turns clockwise from the rear to the front. Then, secure the cable with tape.

NOTE

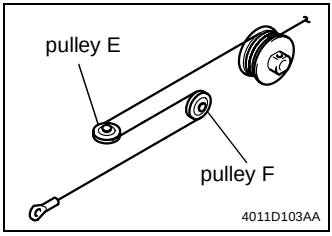
- *Make sure that no part of the cable rides on the other.*



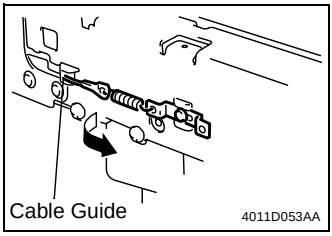
12. Slide the pulley toward the rear and fit one retaining ring E type.
13. Pushing the pulley tightly up against the retaining ring E type, secure the pulley with one screw.



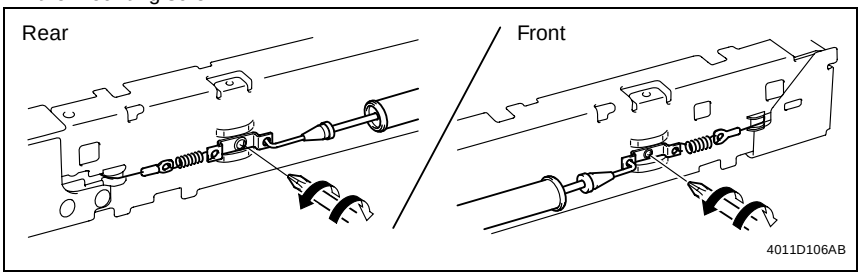
14. Wind the fixed bead end of the cable around pulley H and pulley G and fit the fixed bead at a position about 5.5 mm from the Scanner rail.

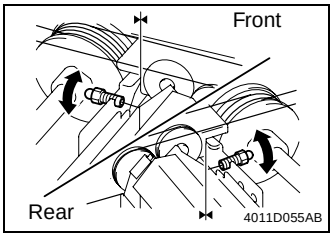


15. Wind the hook end of the cable around pulley E and pulley F.



16. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.
17. Peel off the tape from the pulleys at the front and rear.
18. Loosen one screw that secures the spring mounting bracket. Using a bar tension gage, pull the mounting bracket with a force of 1,300 ± 100 g. Keeping this condition, tighten the mounting screw.





19. Press the 2nd/3rd Mirrors Carriage tightly up against the front and rear rails. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage using the drive cable adjusting screws at the front and rear so that there is a clearance of "0."
20. Mount the Scanner.
21. Reinstall the Reinforcement Bracket.
22. Reinstall the cover.
23. Mount the Original Size Detection Sensor.
24. Reinstall the Left IR Cover.
25. Reinstall the Original Glass and Left Upper Cover.
26. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage.

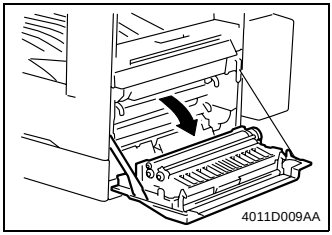
✻ See "3-6. FOCUS-POSITIONING OF THE SCANNER AND 2ND/3RD MIRRORS CARRIAGE."

NOTE

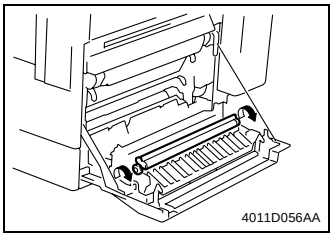
- *Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).*

2-6. IMAGE TRANSFER SECTION

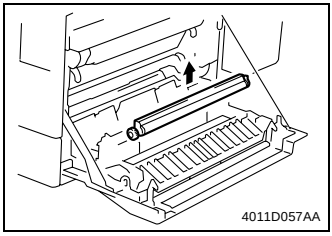
(1) Removal of the Image Transfer Roller Assy



1. Open the Side Cover.



2. Raise the Image Transfer Guide Plate.

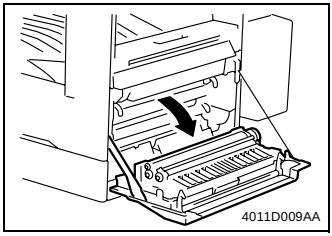


3. Remove the Image Transfer Roller Assy.

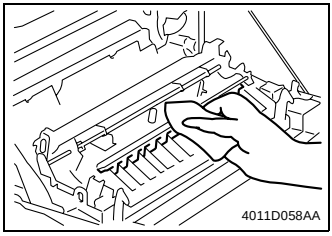
NOTE

- *Do not touch the surface of the Image Transfer Roller directly with bare hands.*

(2) Cleaning of the Comb Electrode



1. Open the Side Cover.

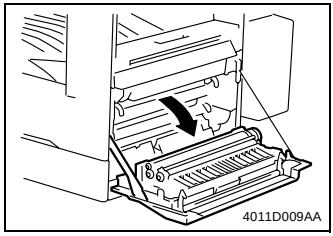


2. Using a soft cloth dampened with alcohol, wipe the Comb Electrode.

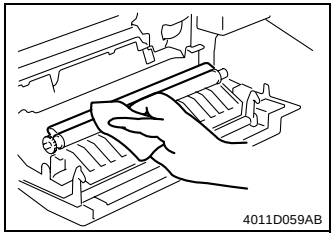
NOTES

- *Make sure the alcohol does not touch the surface of the Image Transfer Roller.*
- *When wiping the Comb Electrode, make sure the cloth is not caught by the ends of the combs.*

(3) Cleaning of the Pre-Image Transfer Guide Plate



1. Open the Side Cover.

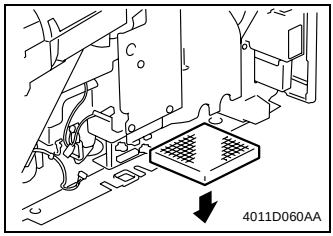


2. Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.

NOTE

- *Make sure the alcohol does not touch the surface of the Image Transfer Roller.*

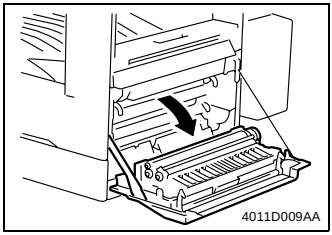
(4) Removal of the Ozone Filter



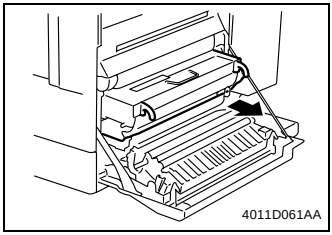
1. Remove the Rear Lower Cover.
2. Remove the Ozone Filter.

2-7. DEVELOPING SECTION

(1) Removal of the Imaging Cartridge



1. Open the Side Cover.



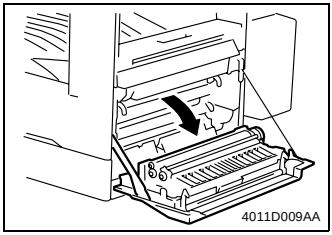
2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

NOTE

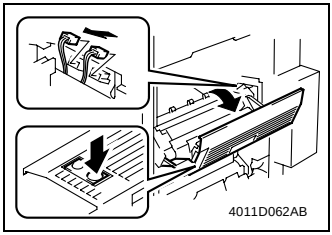
- *When installing the Imaging Cartridge, push it all the way into the machine.*
- *If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.*

2-8. FUSING SECTION

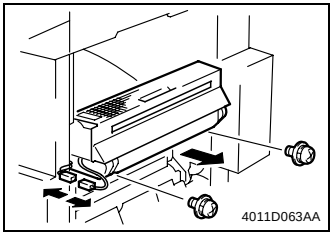
(1) Removal of the Fusing Unit



1. Open the Side Cover.



2. Push the lever and open the Exit Cover.
3. Unplug two connectors in the rear.

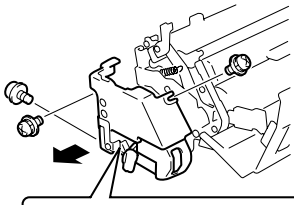


4. Close the Exit Cover, remove two screws, and slide out the Fusing Unit.
5. Unplug one connector at the front and remove the Fusing Unit.

(2) Removal of the Fusing Roller Heater Lamp, Right Fusing Roller, and Left Fusing Roller

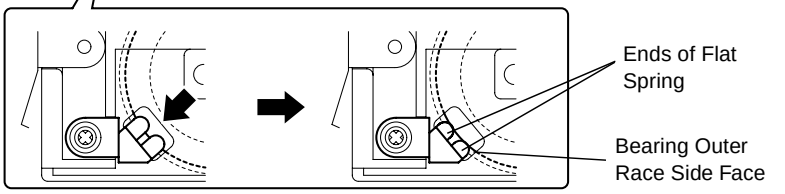
1. Remove the Fusing Unit.

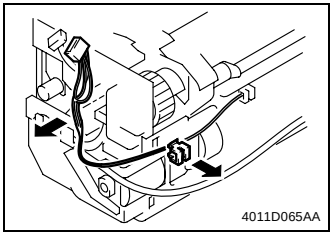
2. Open the Exit Cover.
3. Remove three screws and the Fusing Front Cover.



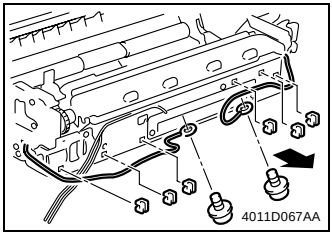
NOTE

- *After the Fusing Front Cover has been installed, insert a screwdriver through the hole in the Fusing Front Cover and move the ends of the flat spring in the direction of the arrow so that they rest on the bearing outer race side face.*

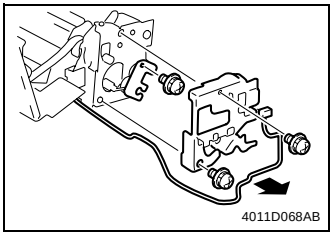

Ends of Flat Spring
Bearing Outer Race Side Face
Where Fusing Front Cover is Mounted
Where Ends of Flat Spring are Moved
4011D064AB



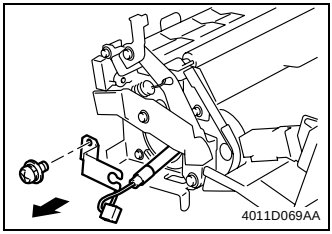
4. Remove one cord holder and the harness.



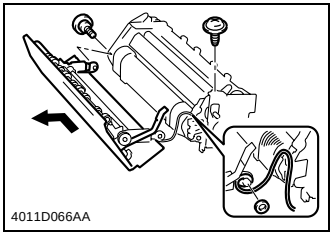
5. Remove two screws, six cord holders, and the harness.



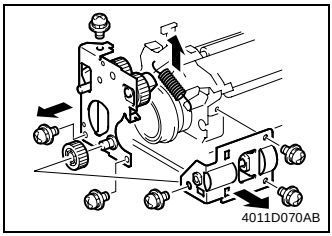
6. Remove the harness from the Rear Cover.
7. Remove two screws and the Rear Cover.
8. Remove one screw and the lamp holder in the rear.



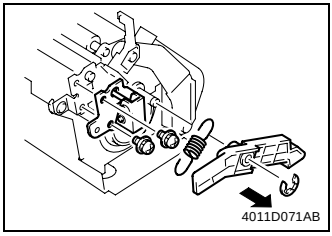
9. Remove one screw and the lamp holder at the front. Then, slide out the Fusing Roller Heater Lamp.



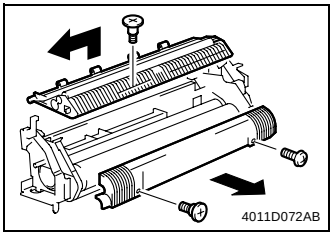
10. Remove the harness from the harness guide and edge cover.
11. Remove one screw, one shoulder screw, and the Paper Exit Cover Assy.



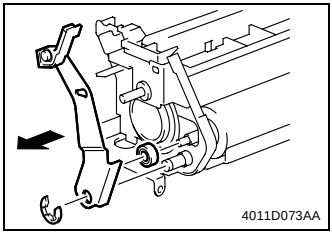
12. Remove three screws, Coupling Gear Assy, and gear.
13. Remove three screws and the Drive Frame Assy.
14. Unhook the spring to free the Rear Pressure Lever Assy.



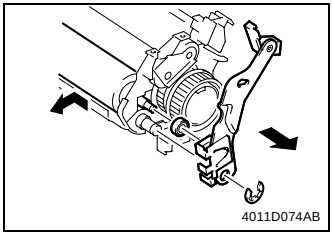
15. Remove two screws and the Lever Assy.
16. Unhook the spring to free the Front Pressure Lever Assy.
17. Snap off one retaining ring E type and remove the idle lever.



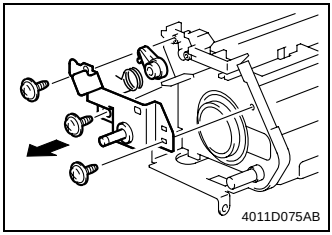
18. Remove one shoulder screw and the Fusing Guide Assy.
19. 1Remove one screw, one shoulder screw, and the cover.



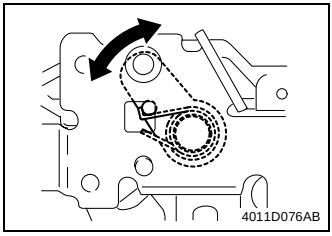
20. Snap off one retaining ring E type and remove the Front Pressure Lever Assy and bearing.



21. Snap off one retaining ring E type and remove the Rear Pressure Lever Assy and bearing.
22. Remove the Right Fusing Roller.

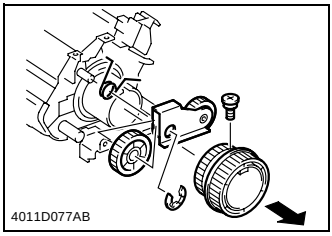


23. Remove three screws, frame, spring, and the lever.

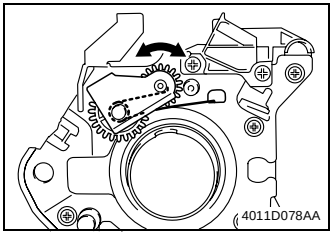


NOTES

- *Study the illustration for how the spring is installed.*
- *After the spring has been installed, move the lever in the direction of the arrow to make sure that it is returned by the tension of the spring.*

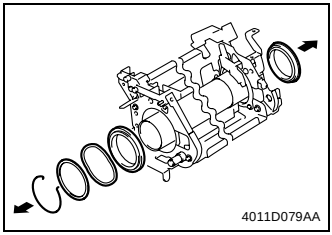


24. Remove one shoulder screw and the gear.
25. Snap off one retaining ring E type and remove the gear assy, gear, and spring.



NOTES

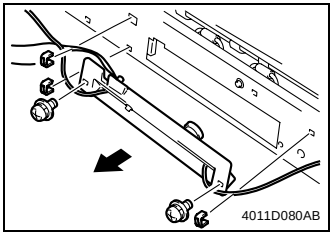
- *Study the illustration for how the spring is installed.*
- *After the spring has been installed, move the gear assy in the direction of the arrow to make sure that it is returned by the tension of the spring.*



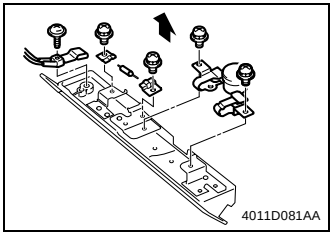
26. Snap off one retaining ring and remove one washer and one wave washer.
27. Remove one bearing each at the front and rear and then remove the Left Fusing Roller.

(3) Remove the Fusing Roller Thermistor, Fusing Roller Hearter Lamp Fuse, and Fusing Roller Thermostat

1. Remove the Fusing Unit



2. Remove three cord holder.
3. Remove two screw and the Holder Assy.

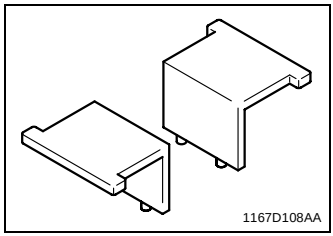


4. Remove one screw and the Fusing Roller Thermistor.
5. Remove two screws and the Fusing Roller Heater Lamp Fuse.
6. Remove two screws and the Fusing Roller Thermostat.

3. ADJUSTMENT

3-1. ADJUSTMENT JIGS AND TOOLS USED

Scanner/Mirrors Carriage Positioning Jigs



3-2. ADJUSTMENT REQUIREMENT LIST

Adjustment Item	Requirements	Adjustment Point	Ref. Page
Touch Panel Adj.	Automatically adjusted	Control Panel	☞ D-35
Original Size Detecting Sensor Adjustment (F7-1)	↑	↑	☞ D-36
Loop Adjustment	—	↑	☞ D-37
Edge Erase			☞ D-38
Leading	—	↑	
Trailing	—	↑	
Right/Left	—	↑	
Registration (CD) (Printer)	1-sided: 10 ± 2.0 mm 2-sided: 10 ± 3.0 mm	↑	☞ D-41
Registration (FD) (Printer)	10 ± 2.0 mm	↑	☞ D-43
Registration (IR)			☞ D-45
CD	↑	↑	
FD	↑	↑	
Zoom Adjust (IR)			☞ D-49
CD	200 ± 2.0 mm	↑	
FD	300 ± 3.0 mm	↑	
IR-Erasure Width	—	↑	☞ D-53
Book Center Erase	—	↑	☞ D-54

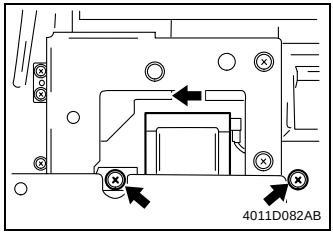
3-3. ADJUSTMENT ITEMS LIST

Job Item / Adjustment/Setting Items		Check Item	Control Panel (replacement)	CCD Unit, Scanner parts (replacement)	Original Size Detecting Sensors (replacement/addition)	Scanner (removal)	Scanner Drive Cables (replacement/installation)	PH Unit (replacement)	Variations in print leading edge void amount	Paper skew, bend, misfeed	Shadow of Original Scales	Shadow at center of book	Memory clear	Master Board (replacement)	MFB2 Board (replacement)	ROM/RAM Board (replacement)	Ref. Page
Touch Panel Adj.		Automatic adjustment	❍										❍				☞ D-35
Original Size Detecting Sensor Adjustment		Automatic adjustment		❍	❍								❍			❍	☞ D-36
Loop Adjustment		—							❍	❍							☞ D-37
Edge Erase	Leading	Setting range 0 to 5 mm						(7)									☞ D-38
	Trailing	Setting range 0 to 5 mm						(8)									
	Right/Left	Setting range 0 to 5 mm						(9)									
Registration (CD) (Printer)		1-sided: 10 ± 2.0 mm 2-sided: 10 ± 3.0 mm						(1)									☞ D-41
Registration (FD) (Printer)		10 ± 2.0 mm						(2)									☞ D-43
Registration (IR)	CD	10 ± 2.0 mm						(5)									☞ D-45
	FD	10 ± 2.0 mm						(6)									
Zoom Adjust (IR)	CD	200 ± 2.0 mm		❍				(3)									☞ D-49
	FD	300 ± 3.0 mm					(2)	(4)									
IR-Erasure Width		Setting range 0 to 3 mm									❍						☞ D-53
Book Center Erase		Setting range 2 to 20 mm										❍					☞ D-54
Focus-Positioning of Scanner and 2nd/3rd Mirrors Carriage		—				❍	(1)										☞ D-55
User's Choice Mode		Re-input											❍				☞ S-6
Tech. Rep. Mode		Re-input											❍				☞ S-15
Security Mode		Re-input											❍				☞ S-29
Adjust Mode		Re-input													❍	❍	☞ D-59
IC3A		Remount												❍			☞ D-58

NOTES

- *Be sure to produce a Service Call Report before performing memory clear or replacing the MFB2 Board or ROM/RAM Board.*
- *The figures shown in the table represent the order of adjustment steps. Where no figures are given, the adjustments can be made at random.*

3-4. ADJUSTMENT OF SCANNER MOTOR TIMING BELT TENSION



1. Remove the Original Glass.
2. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

NOTE

- *The adjustment must be made with the belt teeth in mesh with the pulley grooves.*

3-5. ELECTRICAL/IMAGE ADJUSTMENT

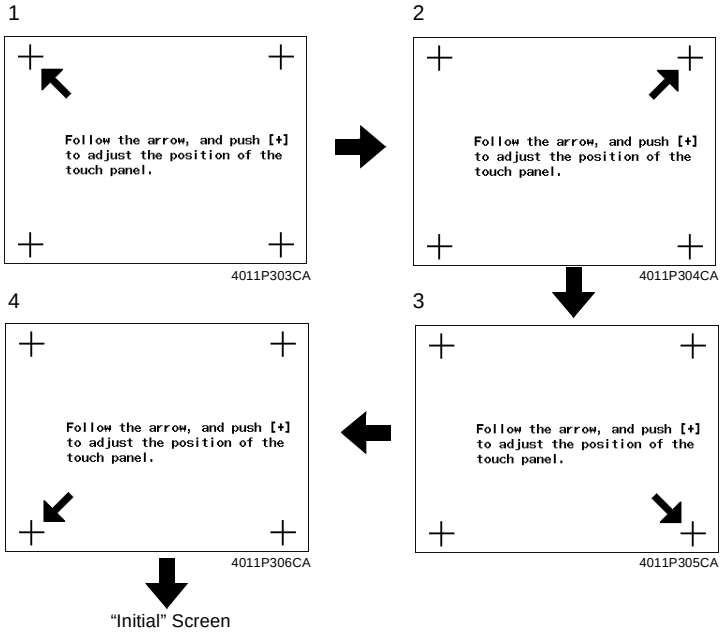
(1) Touch Panel Adj.

Make this adjustment after either of the following procedures have been performed:

- Memory Clear
- Control Panel replacement
- ROM/RAM Board replacement

Adjustment Procedure

1. Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)
2. Touch "Touch Panel Adj. ".


1
Follow the arrow, and push [+] to adjust the position of the touch panel.
4011P303CA
2
Follow the arrow, and push [+] to adjust the position of the touch panel.
4011P304CA
3
Follow the arrow, and push [+] to adjust the position of the touch panel.
4011P305CA
4
Follow the arrow, and push [+] to adjust the position of the touch panel.
4011P306CA
"Initial" Screen

3. Touch "+" on screen 1 shown above.

NOTES

- *At this time, make sure that the very center of "+" is touched with the tip of a ballpoint pen or similar device.*
- *Use care not to damage the screen with the tip of a ballpoint pen.*

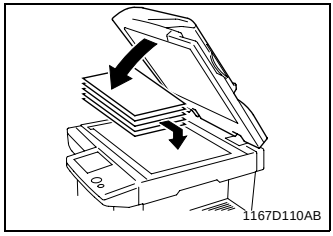
4. Touch "+" on screen 2 shown above.
5. Touch "+" on screen 3 shown above.
6. Touch "+" on screen 4 shown above.

(2) Original Size Detecting Sensor Adjustment (F7-1)

Make this adjustment after any of the following procedures have been performed:

- Memory Clear
- A faulty original size detection occurs
- Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)
- Original Size Detecting Sensor addition or replacement
- ROM/RAM Board replacement

Adjustment Procedure



1. Stack five sheets of blank A3 or 11×17 paper on the Original Glass and lower the Original Cover.
2. Call the Tech. Rep. Mode to the screen.
3. Touch "Function" to display the Function menu.
4. Touch "F7-1".
5. Press the Start key to run the Original Size Detecting Sensor Adjustment function.
6. Turn OFF and ON the Power Switch.

NOTE

- *The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.*

(3) Loop Adjustment

Requirement

Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through

Adjust Mode	Setting Value
Loop Adjustment	-5 to +5

NOTE

- *This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.*

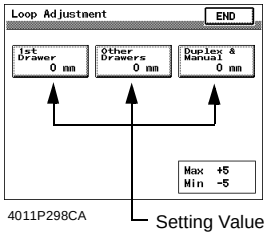
Adjustment Procedure

1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice" and "Printer", in that order.
3. Touch "Loop Adjustment" to call up the Loop Adjustment function.
4. Select the paper source, for which the adjustment is to be made.
5. Press the Clear key to clear the current setting value.
6. Enter the new setting value from the 10-Key Pad.

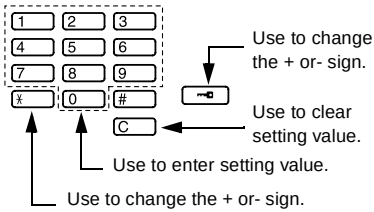
✻ Use the Access Mode key or "✻" to change the + or - sign.

Setting Instructions

- Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.



4011P298CA



4011D001AA

7. Touch "END" to validate the setting value.

NOTE

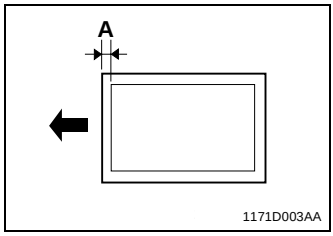
- *Be sure to touch the "END" key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.*

8. Perform the same steps to adjust for other paper sources.

(4) Edge Erase

<Leading>

Requirement



Set the erase width on the leading edge of paper (width A) in the range between 0 and 5 mm.

Adjust Mode	Setting Range
Edge Erase/Leading	0 to 5

NOTE

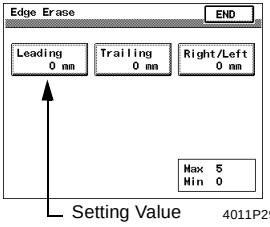
- *This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

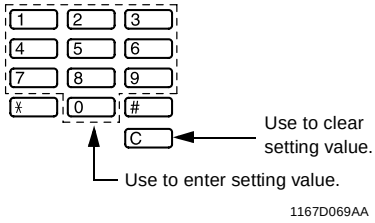
Adjustment Procedure

1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice" and "Printer", in that order.
3. Touch "Edge Erase" and "Leading" in that order to call up the Leading Edge Erase adjustment function.
4. Press the Clear key to clear the current setting value.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width (width A) smaller, decrease the setting value.
To make the edge erase width (width A) greater, increase the setting value.





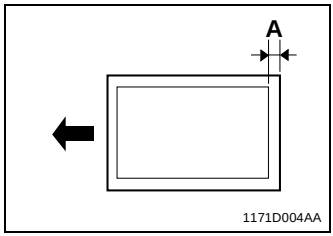
6. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

<Trailing>

Requirement



Set the erase width on the trailing edge of paper (width A) in the range between 0 and 5 mm.

Adjust Mode	Setting Range
Edge Erase/Trailing	0 to 5

NOTE

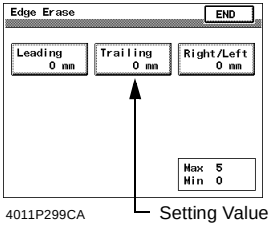
- *This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

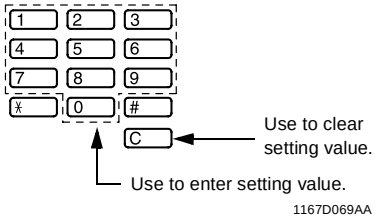
Adjustment Procedure

1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice" and "Printer", in that order.
3. Touch "Edge Erase" and "Trailing" in that order to call up the Trailing Edge Erase adjustment function.
4. Press the Clear key to clear the current setting value.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width (width A) smaller, decrease the setting value.
To make the edge erase width (width A) greater, increase the setting value.





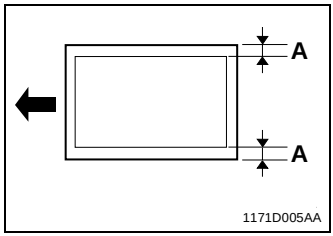
6. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

<Right/Left>

Requirement



Set the erase width on the right and left edges of paper (width A) in the range between 0 and 5 mm.

Adjust Mode	Setting Range
Edge Erase/Right/Left	0 to 5

NOTE

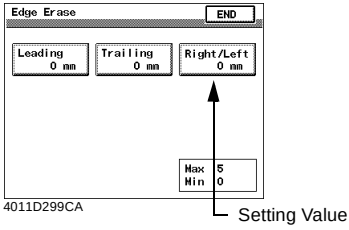
- *This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.*

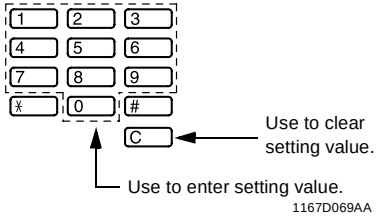
Adjustment Procedure

1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice" and "Printer", in that order.
3. Touch "Edge Erase" and "Right/Left" in that order to call up the Right/Left Edge Erase adjustment function.
4. Press the Clear key to clear the current setting value.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the edge erase width (width A) smaller, decrease the setting value.
To make the edge erase width (width A) greater, increase the setting value.





6. Touch "END" to validate the setting value.

NOTE

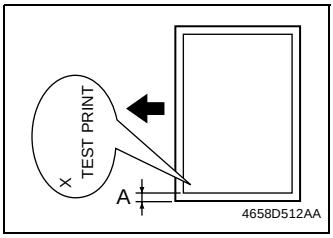
- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

(5) Registration (CD) (Printer)

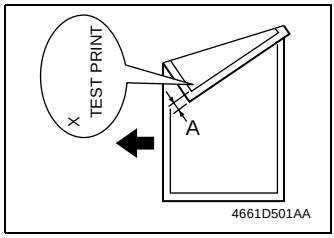
Adjust so that width A on the test pattern produced falls within the following range.

Requirement

1-Side



2-Sided



Specification	Adjust Mode	Setting Range
1-Sided: 10 ±2.0 mm 2-Sided: 10 ±3.0 mm	Registration (CD)	-4.0 to +4.0

NOTE

- *This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.*

Adjustment Procedure

1. Call the Adjust Mode to the screen.
2. Touch "Printer" and "Registration (CD)", in that order.
3. 1-Sided: Touch "Test Print" and select the paper source, for which the adjustment is to be made.
   2-Sided: Touch "Test Print" and select "Duplex".

✻ At this time, the 1st Drawer is selected.

4. Press the Start key.

✻ A test pattern will be produced.

5. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Check to see if width A on the second side of the 2-sided copy meets the specifications. If width A falls outside the specified range, perform the following steps for adjustment.
6. Touch "END" to recall the Registration (CD) screen.
7. Select the paper source selected in step 3.
8. Press the Clear key to clear the current setting value.

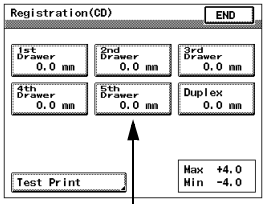
9. Enter the new setting value from the 10-Key Pad.

✻ Use the Access Mode key or "✻" to change the + or - sign.

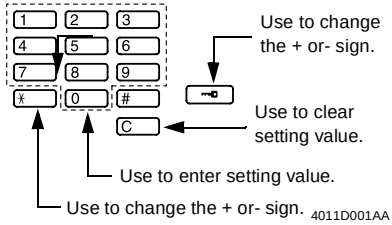
Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



4011P257CA



4011D001AA

10. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

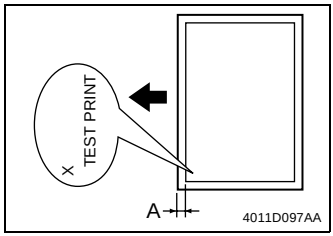
11. Perform the same steps to adjust for other paper sources.

Checking for 2-Sided for Each Paper Source

- In step 3, touch "Test Print", select the paper source and "Duplex", and then press the Start key.

(6) Registration (FD) (Printer)

Requirement



Adjust so that width A on the test pattern output falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	25-cpm copier: -26 to +26 35-cpm copier: -19 to +19

NOTE

- *This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.*

Adjustment Procedure

1. Call the Adjust Mode to the screen.
2. Touch "Printer" and "Registration (FD)", in that order.
3. Touch "Test Print".
4. Press the Start key.

✻ Paper will be fed from the 1st Drawer and a test pattern will be produced.

5. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform the following steps for adjustment.
6. Touch "END" to recall the Registration (FD) screen.
7. Press the Clear key to clear the current setting value.

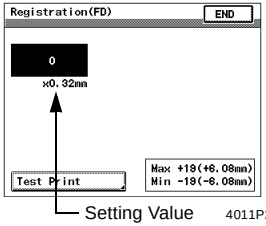
8. Enter the new setting value from the 10-Key Pad.

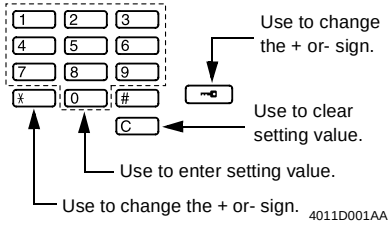
✻ Use the Access Mode key or "✻" to change the + or - sign.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.





9. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

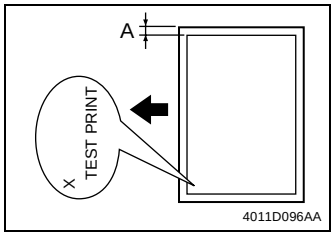
Checking for Each Paper Source

- 1-Sided: In step 3, touch "Test Print", select the paper source, then press the Start key.
- 2-Sided: In step 3, touch "Test Print", select the paper source and "Duplex", then press the Start key.

(7) Registration (IR)

<CD>

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (CD)	-72 to +72

NOTE

- *This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.*

Adjustment Procedure

1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern.

✻ See steps 1 through 4 of "(5) Registration (CD) (Printer)" of "3-5. ELECTRICAL/IMAGE ADJUSTMENT."

2. Place the test pattern produced on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.
4. Call the Adjust Mode to the screen.
5. Touch "IR", "Registration", and "CD", in that order.
6. Press the Clear key to clear the current setting value.

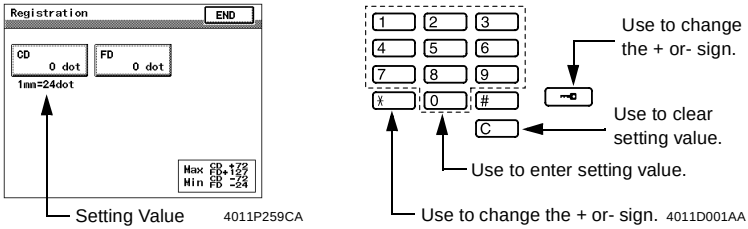
7. Enter the new setting value from the 10-Key Pad.

✻ Use the Access Mode key or "✻" to change the + or - sign.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



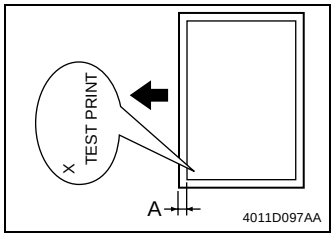
8. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

<FD>

Requirement



Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

Specification	Adjust Mode	Setting Range
10 ±2.0 mm	Registration (FD)	-24 to +127

NOTE

- *This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.*

Adjustment Procedure

1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern.

✻ See steps 1 through 4 of "(5) Registration (CD) (Printer)" of "3-5. ELECTRICAL/IMAGE ADJUSTMENT."

2. Place the test pattern produced on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.
4. Call the Adjust Mode to the screen.
5. Touch "IR", "Registration", and "FD", in that order.
6. Press the Clear key to clear the current setting value.

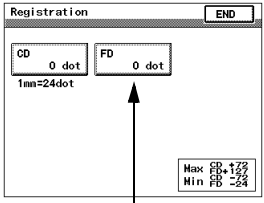
7. Enter the new setting value from the 10-Key Pad.

✻ Use the Access Mode key or "✻" to change the + or - sign.

Setting Instructions

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✻ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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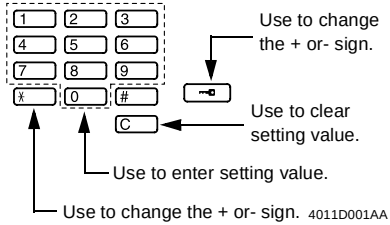


4011D001AA

8. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

(8) Zoom Adjust (IR)

<CD>

Requirement

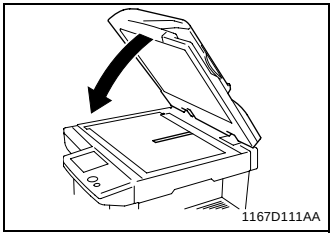
- The difference should be within ±1.0 % of the actual length.
- Adjust so that the following specifications are satisfied with a scale length of 200 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	200 ±2.0 mm	Zoom Adjust (CD)	0.990 to 1.010

NOTE

- *This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

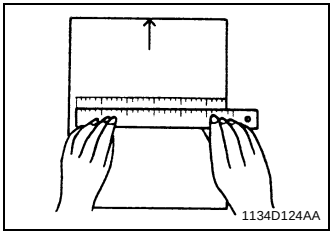
Adjustment Procedure



1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✻ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



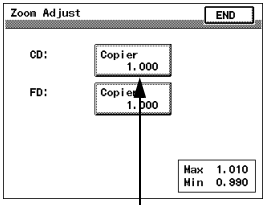
2. Measure the length of the scale on the copy to find the difference.
   If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust Mode to the screen.
4. Touch "IR" , "Zoom Adjust", and "CD", in that order.
5. Press the Clear key to clear the current setting value.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

✻ If the measurement does not fall within the specifications through one setting, try another setting.



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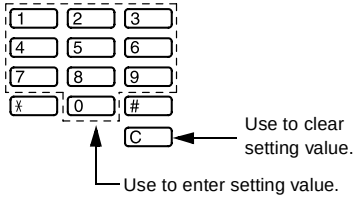


1167D069AA

7. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

<FD>

Requirement

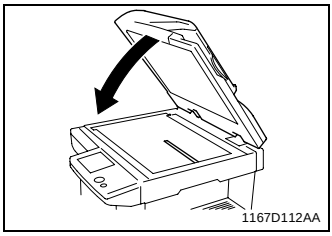
- The difference should be within ±1.0 % of the actual length.
- Adjust so that the following specifications are satisfied with a scale length of 300 mm.

Zoom Ratio	Specification	Adjust Mode	Setting Range
Full size (×1.000)	300 ±3.0 mm	Zoom Adjust (FD)	0.990 to 1.010

NOTE

- *This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

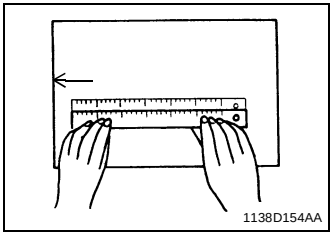
Adjustment Procedure



1. Place a scale in parallel with the Original Length Scale and make a copy.

✻ Use the full size (×1.000) mode and A3 or 11 × 17 paper.

✻ If the scale is of plastic and transparent, place a blank sheet of paper over it.



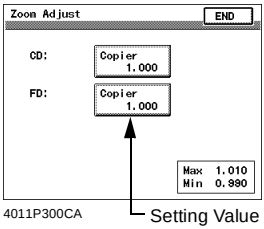
2. Measure the length of the scale on the copy to find the difference.
   If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust Mode to the screen.
4. Touch "IR" , "Zoom Adjust", and "FD", in that order.
5. Press the Clear key to clear the current setting value.
6. Enter the new setting value from the 10-Key Pad.

Setting Instructions

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

✻ If the measurement does not fall within the specifications through one setting, try another setting.



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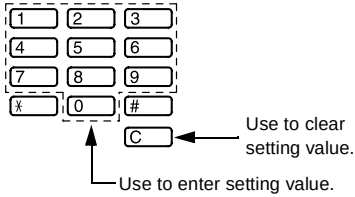

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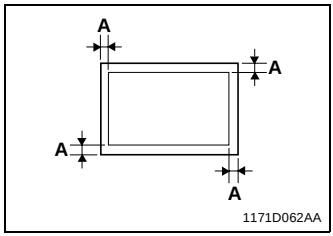
7. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

(9) IR-Erasure Width

Requirement



Set the erase width along the four edges of the paper (width A) in the range between 0 and 3 mm.

Adjust Mode	Setting Range
IR-Erasure Width	0 to 3

NOTE

- *This adjustment must be made when a shadow is produced from the Original Scale.*

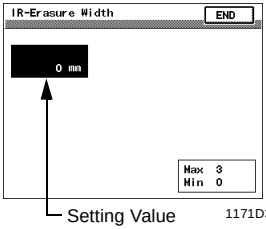
Adjustment Procedure

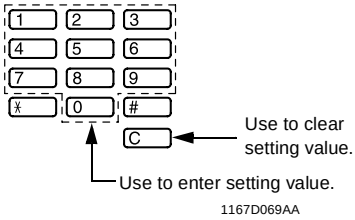
1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice".
3. Touch "IR-Erasure Width" to call up the IR-Erasure Width adjustment function.
4. Press the Clear key to clear the current setting value.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the erase width along the four edges of the paper (width A) smaller, decrease the setting value.

To make the erase width along the four edges of the paper (width A) greater, increase the setting value.





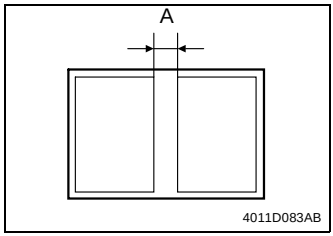
6. Touch "END" to validate the setting value.

NOTE

- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

(10) Book Center Erase

Requirement



Set the erase width at the center of the paper (width A) in the range between 2 and 20 mm.

Adjust Mode	Setting Range
Book Center Erase	2 to 20

NOTES

- *This setting determines the erase width when Book Center Erase is selected.*
- *This adjustment must be made when a shadow is produced at the center of the copy made from an open book.*

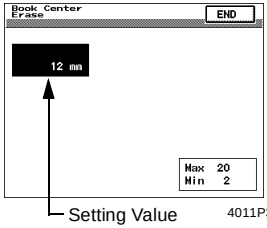
Adjustment Procedure

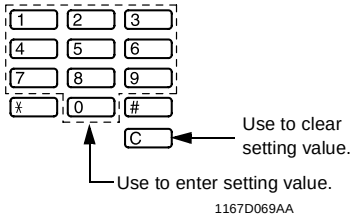
1. Call the Tech. Rep. Mode to the screen.
2. Touch "Tech. Rep. Choice".
3. Touch "Book Center Erase" to call up the Book Center Erase adjustment function.
4. Press the Clear key to clear the current setting value.
5. Enter the new setting value from the 10-Key Pad.

Setting Instructions

To make the erase width at the center of the paper (width A) smaller, decrease the setting value.

To make the erase width at the center of the paper (width A) greater, increase the setting value.





6. Touch "END" to validate the setting value.

NOTE

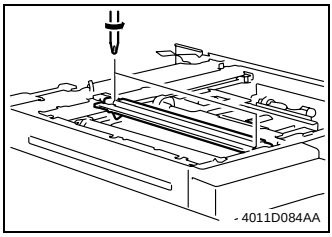
- *Be sure to touch "END" to return to the normal operating mode. If the Panel Reset key is used, the previous setting remains valid.*

3-6. FOCUS-POSITIONING OF THE SCANNER AND 2ND/3RD MIRRORS CARRIAGE

Make this adjustment after any of the following procedures has been performed:
- After the Scanner Drive Cables have been replaced.
- When the Scanner has been removed.
- When the Scanner Drive Cable comes unwound.

Requirement
- With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.

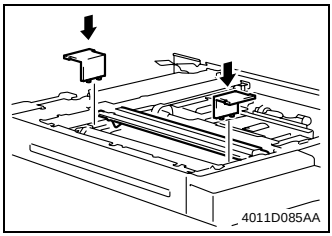
Adjustment Procedure



1. Remove the Exposure Lamp.

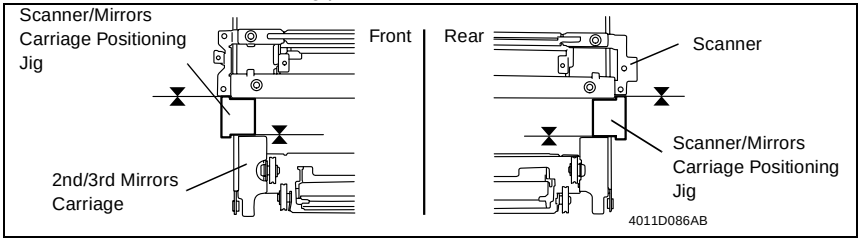
✻ See steps 1 through 7 of "(8) Removal of the Scanner" of "2-5. OPTICAL SECTION.

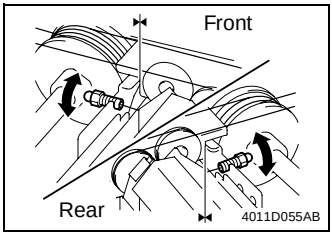
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.



3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage

4. Press the 2nd/3rd Mirrors Carriage up against the jigs and make sure that there is no clearance at the front and rear ends.
5. Press the Scanner tightly up against the jigs and, keeping that condition, tighten the setscrews of the cable holding plate.

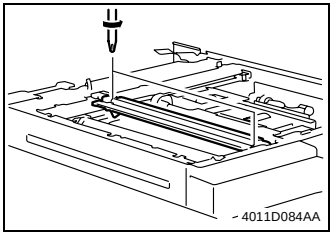




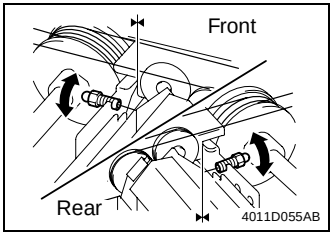
NOTE

- *If there is any gap between the Scanner and the Scanner/Mirrors Carriage Positioning Jigs or between the 2nd/3rd Mirrors Carriage and the jigs when each is pressed up against the jigs, eliminate the gap by turning the adjusting screws for the front and rear Scanner Drive Cables.*

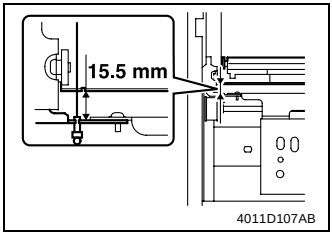
✻ If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.



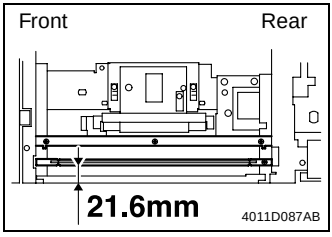
1. Temporarily loosen the setscrews of the cable holding plate of the Scanner Drive Cable.



2. Press the 2nd/3rd Mirrors Carriage up against the front and rear rails and check that there is no clearance at the front and rear ends.
3. If there is any clearance, turn the Scanner Drive Cable adjusting screws at the front and/or rear as necessary to eliminate the clearance.



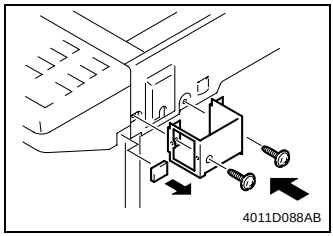
4. Move the 2nd/3rd Mirrors Carriage so that there is a distance of 15.5 mm between the 2nd/3rd Mirrors Carriage and the rail.



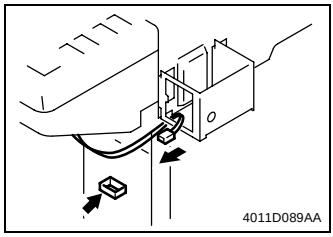
5. With the Scanner located at a position 21.6 mm from the outer end face of the right side of the Scanner, firmly tighten the setscrews of the cable holding plate so that the Scanner runs parallel with the end face both at the front and rear ends.

4. MISCELLANEOUS

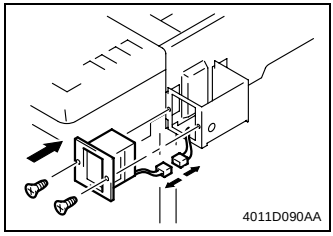
4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



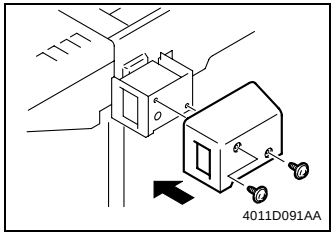
1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.



4. Remove the harness from one cord clamp and route it as shown in the illustration.



5. Connect the Key Counter Socket connector.
6. Using two screws, secure the counter socket.



7. Using two screws, secure the Key Counter Cover.

NOTE

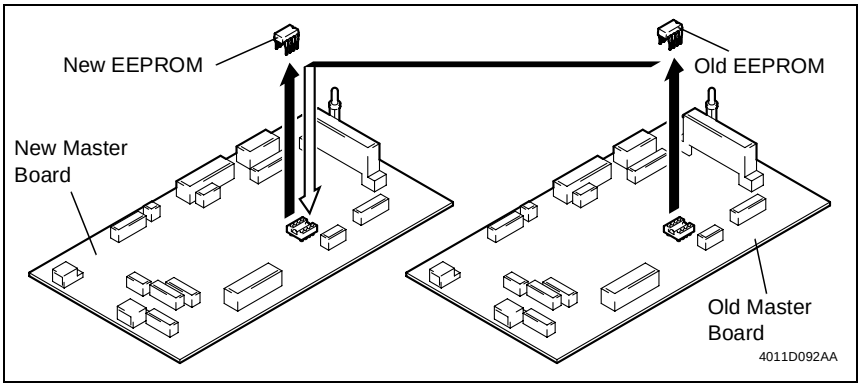
- *When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.*

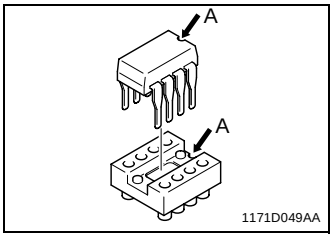
4-2. REMOUNTING THE EEPROM (IC3A)

NOTES

- *When the Master Board is replaced with a new one, be sure to demount EEPROM (IC3A) from the old Master Board and mount it on the new Master Board.*
- *If the Master Board has been replaced, but the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one at the same time.*

1. Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)
2. Demount the EEPROM (IC3A) from the new Master Board.
3. Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.





NOTE

- *Note the alignment notch on the EEPROM (IC3A) when mounting the IC.*

4-3. ADJUST DATA INPUT

When any of the following procedures has been performed, be sure to re-input the Adjust data:

- The MFB2 Board has been replaced.
- The ROM/RAM Board has been replaced.

NOTES

- *Be sure to produce a Service Call Report before performing the above procedures.*
- *If an option (ADF, Duplex Unit, or add-on cassette) is mounted, be sure to input the related Adjust data.*

Adjust Data Entry Items

IR	Printer
Registration (CD)	Registration (CD) (1st Drawer)
Registration (FD)	Registration 2-Sided (35-cpm copier)
Zoom Adjust (CD)	Registration (FD)
Zoom Adjust (FD)	

SWITCHES ON PWBs, TECH. REP. SETTINGS

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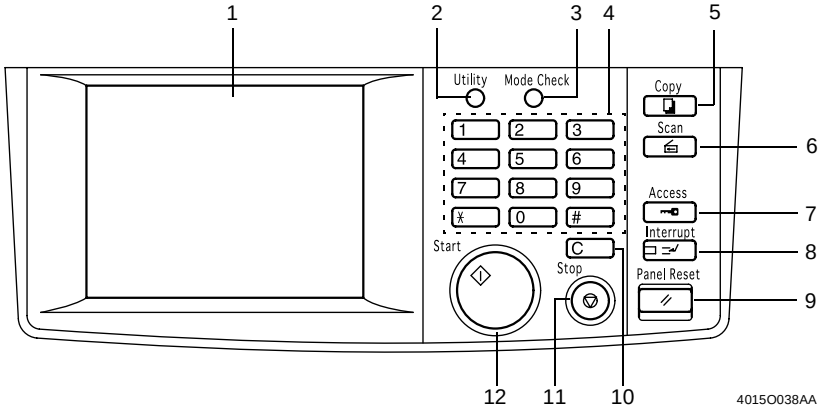
1. CONTROL PANEL KEYS AND TOUCH PANEL

1-1. Control Panel Keys



1. Touch Panel
- Shows various screens and message.

2. Utility Key
- Press to show the Utility Mode menu.

3. Mode Check Key
- Lists the current settings on the screen.
- Access to register the current settings in a program.

4. 10-Key Pad
- The number of copies to be made.
- The various numeric values.

5. Copy Key
- Press to select the Copy mode.

6. Scan Key
- Press to select the Scanner mode.

7. Access Mode Key
- Press to enter the access number when Copy Track of the Administrator mode available.
- Press the access Key.

8. Interrupt Key
- Press to select the Interrupt mode.

9. Panel Reset Key
- Press to set the machine into the initial mode, clearing all settings made on the control panel.

10. Clear Key
- Clear the various numeric values.

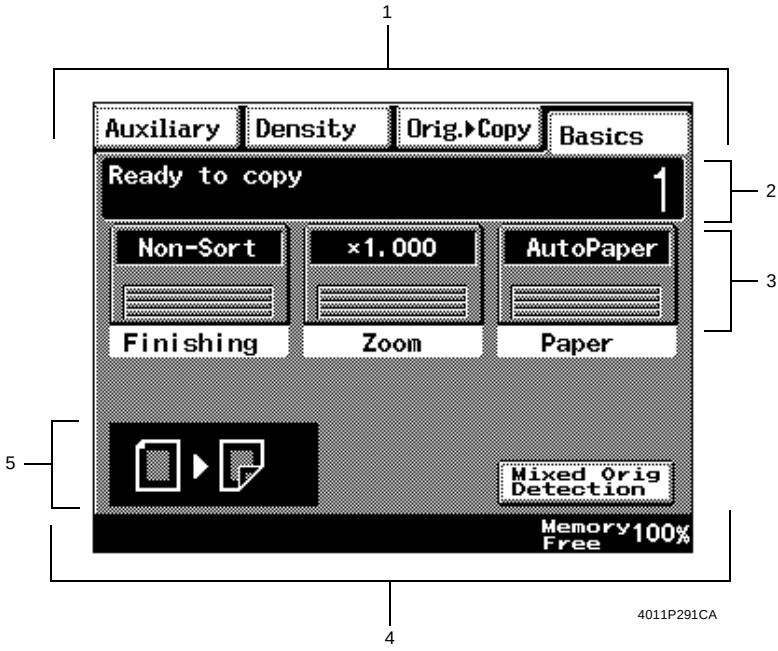
11. Stop Key
- Stop a print cycle.
- Stop a scanning cycle.

12. Start Key
- Start a print cycle.

1-2. Explanation of the Touch Panel

(1) Basis Screen

The Basic screen is the initial screen that appears when the copier is turned ON.



1. Supplementary Function Keys
- The auxiliary, Density, Orig. ▶ Copy, and Basics keys are displayed.

2. Message Display
- Shows the current machine status, operating instructions and precautions, and other data including the number of copies selected.

3. Function Display
- Shows the basic function keys and the corresponding functions currently selected for use.

4. Sub-message Display
- Shows graphic representation of the operating status of a job.

5. Set Function
- Shows graphic representation of the copying type currently selected for use.

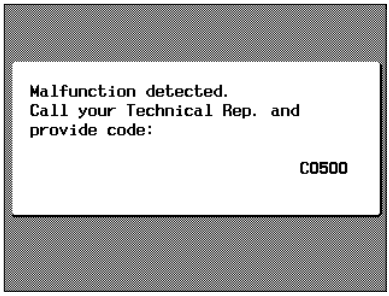
(2) Warning Screens

The Warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

Given when a malfunction occurs.

E.g.: Malfunctions that can be identified with a specific code.

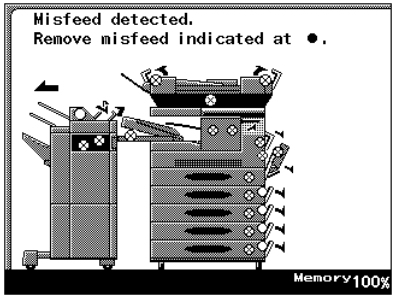


4011P274CA

<Error Display>

Given when an error occurs.

E.g.: Paper misfeed, door open, etc.

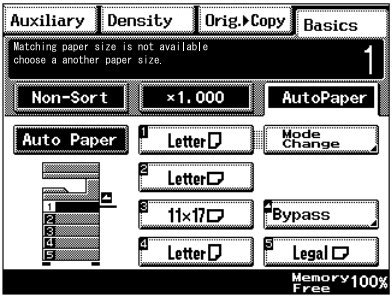


4012P179CC

<Warning Display>

Given when only a defective copy will be produced because of erroneous or illegal panel settings.

E.g.: Unmatched paper size in Auto Paper.

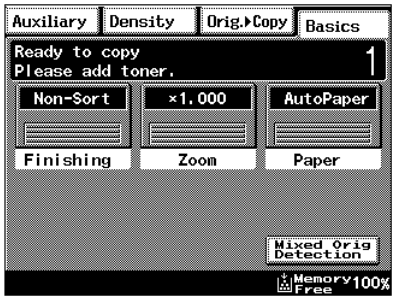


4011P292CA

<Caution Display>

Given when, though further copier operation will be possible, it could eventually result in a malfunction.

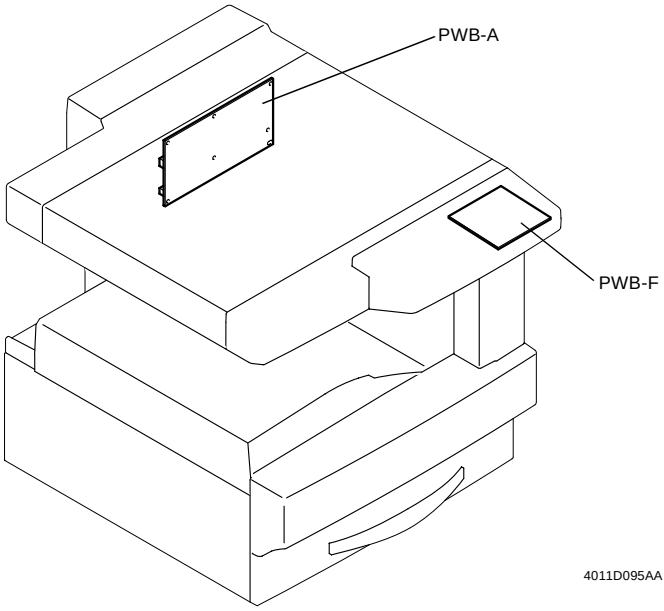
E.g.: Toner near empty, etc.



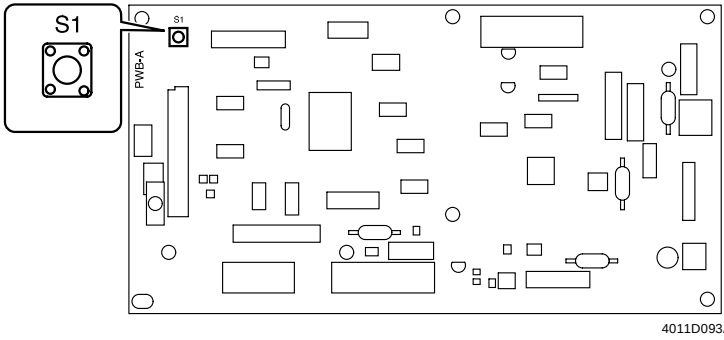
4011P293CA

2. FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

2-1. PWB Location

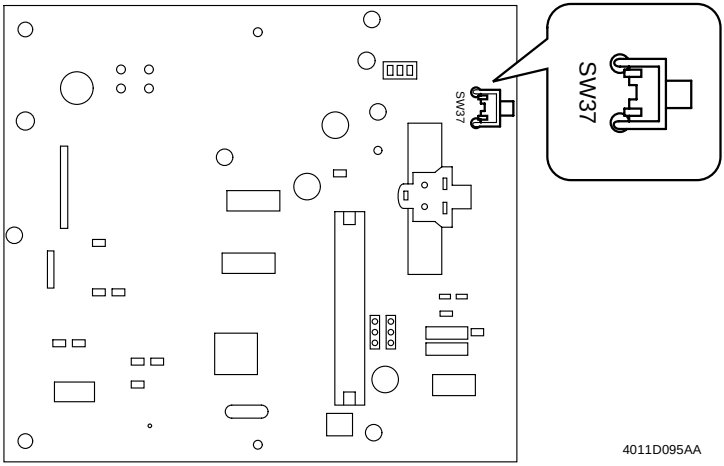


2-2. PWB-A (Master Board)



Symbol	Name	Description
S1	Test Print Switch	Produces the test pattern of Function F12. <Procedure> 1. Press S1 to let the copier start the output sequence. 2. Press S1 a second time to stop the output sequence.

2-3. PWB-F (Control Panel)



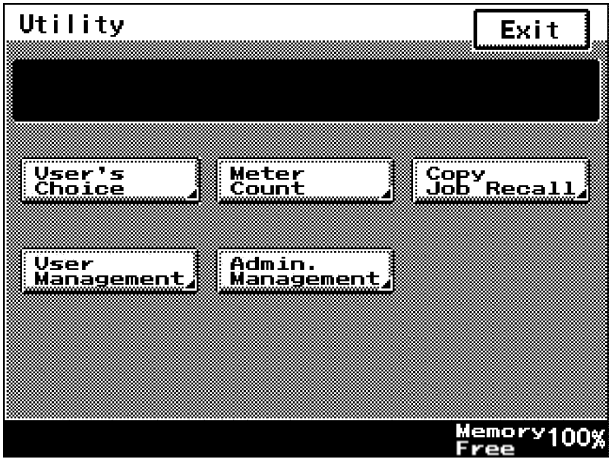
Symbol	Name	Description
SW37	Warm Restart Switch	Used to enter the initial mode.

3. UTILITY MODE

• Utility Mode is used to make various settings according to the user's need.

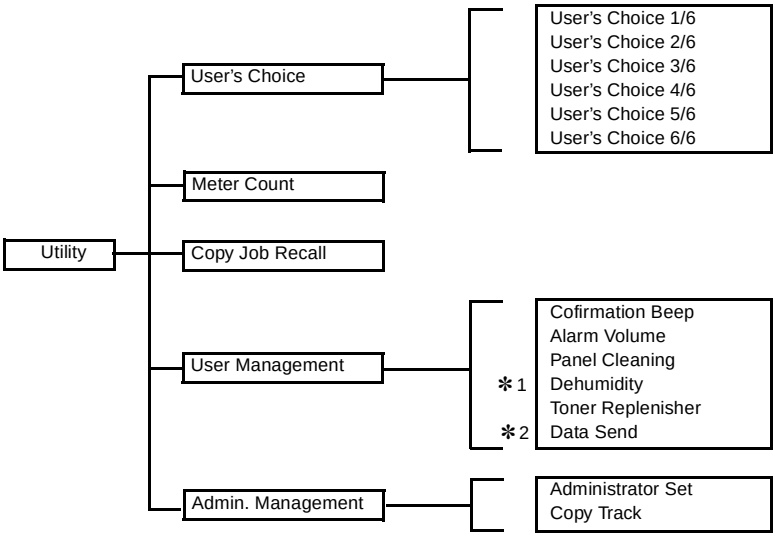
3-1. Utility Mode selection Screen

• Press the Utility key on the control panel.



4011P294CA

3-2. Utility Mode Function Tree



✻ 1:Set with "Dehumidity" available from Tech. Rep. Mode.

✻ 2:The description of the function is displayed when a Data Terminal is connected to the machine.

3-3. Settings in the Utility Mode

Touch Panel Display	Setting
User's Choice	User's Choice is used to make various settings according to the user's need.
Meter Count	Displays the counts of various counters.
Copy Job Recall	Permits programming of various functions, including copying jobs.
User Management	Permits setting of the various User Management functions.
Admin. Management	The entry of the "Administrator #" set using the Tech. Rep. mode permits the settings of the following functions.

(1) User's Choice Mode

- User's Choice is used to make various settings according to the user's need.

1. User's Choice Function Setting Procedure

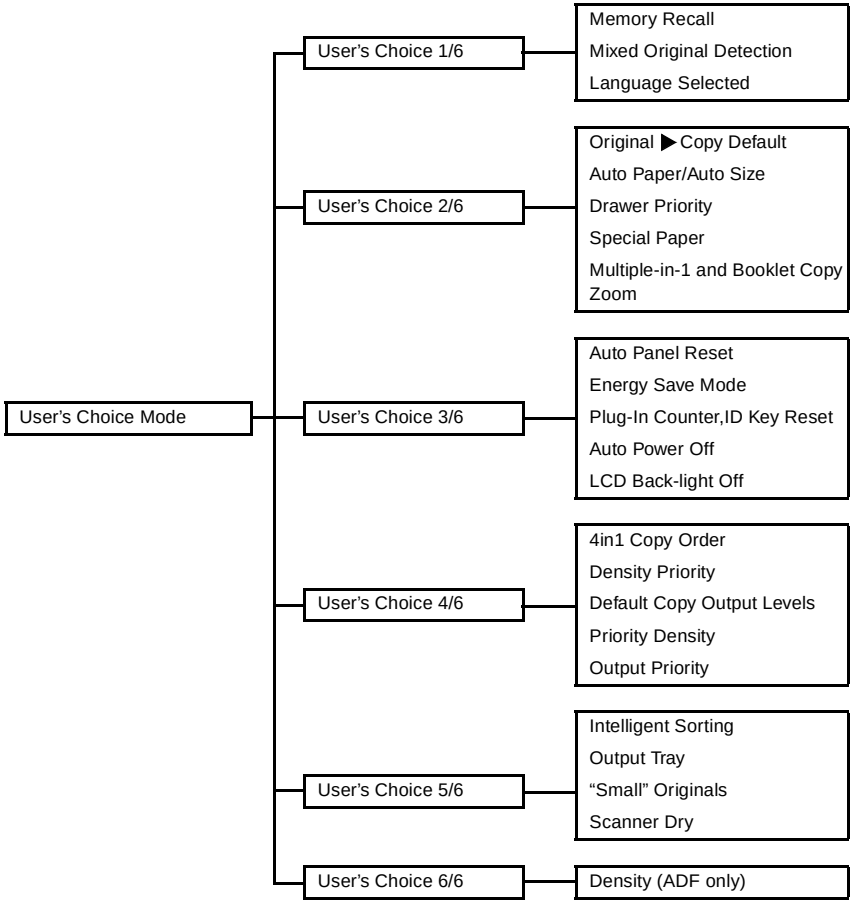
<Procedure>

1. Press the Utility key.
2. Touch the "User's Choice" key.
3. Select the appropriate screen from the menu.
4. Select the appropriate function.
5. After the settings are complete, touch the "Enter" key to validate the settings.

<Exiting the Mode>

- Touch the "Exit" key.

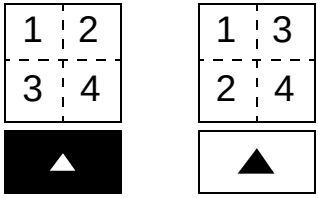
2. User's Choice Function Tree



3. Settings in the User's Choice Mode

Touch Panel Display	Setting (The default is **Highlighted**).
Memory Recall	Select whether to enable or disable the Memory Recall function. ON / **OFF**
Mixed Original Detection	Select the priority Mixed Original Detection mode that is automatically selected when the Power Switch is turned ON or Panel Reset key pressed. ON / **OFF**
Language Selected	Select the language of the Touch Panel messages. <Metric Areas> **ENGLISH** / GERMAN / FRENCH DUTCH / ITALIAN / SPANISH PORTUGUESE / DANISH / NORWEGIAN SWEDISH / FINISH / JAPANESE <Inch Areas> **ENGLISH** / FRENCH / SPANISH JAPANESE
Original ▶ Copy Default	Select the priority type of Original ▶ Copy setting selected automatically when the Power Switch is turned ON or Panel Reset key pressed. ***Note*** • *Some type settings are not available depending on the types of options configured with the copier and the settings made in "Tech. Rep. Choice."* **1-Sided ▶ 1-Sided** / 1-Sided ▶ 2-Sided / 2-Sided ▶ 2-Sided
Auto Paper/Auto Size	Select the priority Auto mode (Auto Paper or Auto Size) selected when the Power Switch is turned ON or Panel Reset key pressed. **Auto Paper** / Auto Size / Manual
Drawer Priority	Select the priority paper source that is automatically selected when the copier is set into the Auto Size or Manual mode. **1st Drawer** / 2nd Drawer 3rd Drawer / 4th Drawer 5th Drawer
Special Paper	Define the type of paper used for each paper source, or designate a particular paper source for special paper. **Normal** / Not for 2-Sided Recycled / Special

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Multiple-in-1 and Booklet Copy Zoom</td><td>Select whether to enable or disable recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Auto Panel Reset</td><td>Select the time it takes the Auto Panel Reset function, which resets the panel settings when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.
<table><tr><td>30 sec.</td><td>1 min.</td><td>2 min.</td></tr><tr><td>3 min.</td><td>5 min.</td><td>No Reset</td></tr></table></td></tr>
<tr><td>Energy Saver Mode</td><td>Select the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated.
• Press the “Clear” key and, Use the 10-Key Pad to set the time.
<table><tr><td>1 to 240 min. (15 min.)</td></tr></table></td></tr>
<tr><td>Plug-In Counter, ID Key Reset</td><td>Select whether or not to reset the panel automatically when the Access Mode key is pressed (in the Copy Track mode) or the Plug-In Counter is unplugged.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Auto Power Off</td><td>Select the time it takes the Auto Shut Off function, which shuts down the copier when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.
• Press the “Clear” key and, Use the 10-Key Pad to set the time.
Note:
• The option of “OFF” becomes available on the screen if “Yes” is selected for “Disable Auto Shut off” of the “Admin. Management” function.
<table><tr><td>15 to 240 min.</td><td>OFF</td></tr></table>✻ Default: 35/25 CPM (60 min.)</td></tr>
<tr><td>LCD Back-light Off</td><td>Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated.
• Press the “Clear” key and, Use the 10-Key Pad to set the time.
<table><tr><td>1 to 240 min. (1 min.)</td></tr></table></td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
4in1 Copy Order	Specify the default copying order in the 4in1 mode. 
Density Priority	Specify the priority exposure mode that is selected automatically when the Power Switch is turned ON or the Panel Reset key pressed. <Density> **Auto** | Manual <Original Image Type> **Text** | Photo | Text/Photo
Default Copy Output Levels	Auto : Select the priority exposure level in the Auto Exposure mode. Manual: Select the priority exposure level in the Manual Exposure mode. <Auto> Lighter | **Normal** | Darker <Manual> Lighter ... Darker
Priority Density	Set the image density level for printing. -2 | -1 | **0** | 1 | 2
Output Priority	Select the priority finishing type. ***Note:*** • *The contents of the display vary depending on the types of finishing options mounted on the machine.* **Non Sort** / Sort / Group Corner Staple / 2-Point Staple 2-Hole Punch / 3-Hole Punch

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Intelligent Sorting</td><td>Select whether to enable or disable the function that automatically switches between Sort and Non-Sort according to the number of originals and the number of copy sets to be made.
Applicable when the system is equipped with a finishing option and using an ADF or ADFR.
<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a finishing option.
<Fax>
<table><tr><td>1</td><td>2</td><td>3</td></tr></table>
<PC Print>
<table><tr><td>1</td><td>2</td><td>3</td></tr></table>
<Copy> Displayed when a Job Tray is mounted.
<table><tr><td>1</td><td>2</td></tr></table>
✻ When a Finisher is mounted: PC Print default setting "2"</td></tr>
<tr><td>“Small” Originals</td><td>Select whether to enable or disable a copy cycle when it is initiated with an original of a small size that is not detectable by the system placed on the Original Glass.
<table><tr><td>ON</td><td>OFF</td></tr></table>
✻ Default: Metric areas OFF / Inch Areas ON</td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
Note:
• When entering a value for Hours and Minutes and if it is a single-digit number, first enter a “0.”</td></tr>
<tr><td>Density (ADF only)</td><td>Adjust the copy image density level when the ADF is being used.
✻ : Initial setting
<table><tr><td>✻</td><td> </td><td>When the standard original (text, etc.) is used.</td></tr><tr><td></td><td> </td><td>To give better reproduction of faint original.</td></tr></table></td></tr>
</table>

(2) User Management

- Permits setting of the various User Management functions.

1. User Management Function Setting Procedure

<Procedure>

1. Press the Utility key.
2. Touch the “User Management” key.
3. Select the appropriate function.
4. After the settings are complete, touch the “Enter” key to validate the settings.

<Exiting the Mode>

- Touch the “Enter” key.

2. Settings in the User Management

Touch Panel Display	Setting (The default is **Highlighted**).
Cofirmation Beep	Select the volume of the "beep" that sounds when a key on the control panel is pressed or one on the Touch Panel is touched. 0 | 1 | 2 | **3** | 4 | 5
Alam Volume	Select the volume of the alarm. 0 | 1 | 2 | **3** | 4 | 5
Panel Clearing	Used to disable keys on the Touch Panel, allowing the user to clean the Touch Panel without having to turning OFF the Power Switch.
Dehumidity	Starts a dehumidifying sequence for the PC Drum and Scanner.
Toner Replenisher	Replenishes the supply of toner.
Data Send	Transmits various data to the Center when a Data Terminal is mounted.

(3) Admin. Management

- The entry on the “Administrator # Input ” set using the Tech. Rep. mode permits the settings of the following functions.

1. Admin. Management Mode Function Setting Procedure

<Procedure>

1. Press the Utility key.
2. Touch the “Admin. Management Mode” key.
3. Enter the Administrator number from the 10-Key pad.
4. Touch the “Enter” key.
5. Select the appropriate function.
6. After the settings are complete, touch the “Enter” key to validate the settings.

<Exiting the Mode>

- Touch the “Exit” key.

2. Settings in the Admin. Management Mode

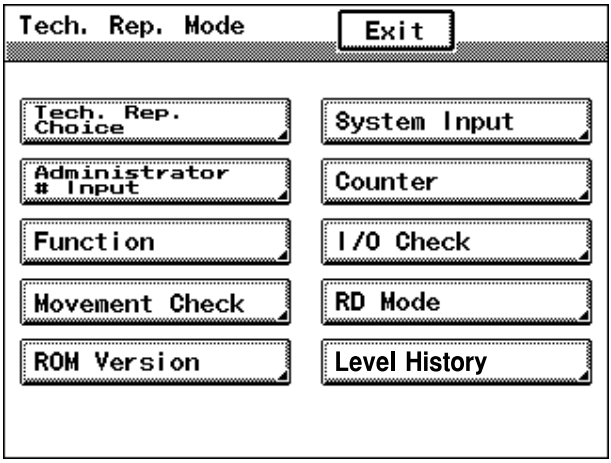
<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Administrator Set</td><td>Displays the Max. Copy Sets and Disable Auto Shut OFF screens.</td></tr>
<tr><td>Max. Copy Sets</td><td>Determine the number of copies or copy sets that can be set using the 10-Key Pad.
<table><tr><td>1 to 99</td><td>OFF</td></tr></table></td></tr>
<tr><td>Disable Auto Shut Off</td><td>Select whether to enable or disable the setting of the “Auto Shut Off” function available from User’s Choice.
<table><tr><td>No</td><td>Not displayed.</td></tr><tr><td>Yes</td><td>Displayed.</td></tr></table></td></tr>
<tr><td>Copy Track</td><td>Displays the various setting screens including Copy Track.</td></tr>
<tr><td>Copy Track Mode</td><td>Select the number of accounts to be controlled
<table><tr><td>OFF</td><td>100 Accounts 1</td><td>100 Accounts 2</td><td>1000 Accounts</td></tr></table></td></tr>
<tr><td>Copy Track Data</td><td>Select the particular account number.
Output the copy track data.
<Procedure>
Place the required number of sheets of A4L or Letter L paper on the 1st Drawer.
✻ When “All Counter Reset” is touched, it clears all data under control.</td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
100 Accounts-1 100 Accounts-2	100 Accounts-1 • Copying is authorized only for the accounts, for which Access Codes have been programmed. 100 Accounts-2 • Permits the accounts, for which Access Codes have been programmed, to make copies. Copy track data can also be maintained if the Access Mode key is pressed before attempting to make copies. The copy track data of the selected page is displayed. "No.": Enter the set account number from the 10-Key Pad. "Total Count": Displays the count of the Total Counter. "Size Count": Displays the count of the Size Counter. "Copy Limit": Enter the maximum number of copies that can be made from the 10-Key Pad. "Access Code": Enter the access number, which can range from 0001 to 9999, from the 10-Key Pad. ✻ These data can be cleared with the Clear key.
1000 Accounts	The copy track data of the selected page is displayed. "No.": Displays the account number. (Setting cannot be changed.) "Total Count": Displays the count of the Total Counter. (It can be cleared with the Clear key.) ***Note:*** • *The account number corresponds to the access code(ID) of that particular account.*

4. TECH. REP. MODE

- This mode is used by the Tech. Rep. to check, set, adjust, and/or program various service functions.

4-1. Tech. Rep. Mode Menu Screen



4011P296CA

4-2. Tech. Rep. Mode Function Setting Procedure

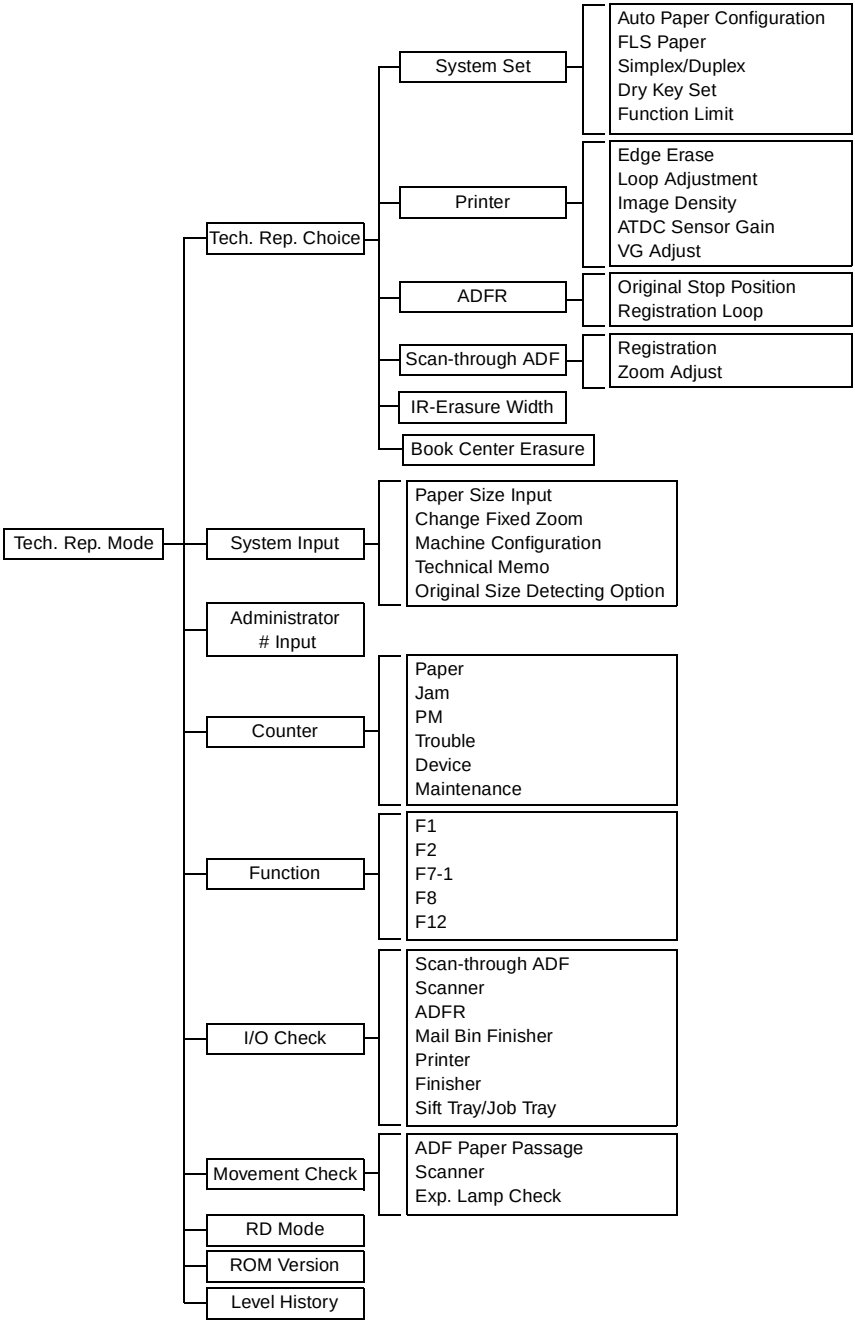
<Procedure>

1. Press the Utility key.
2. Press the Meter Count key.
3. Press the following keys in this order:
   Stop → 0 → 0 → Stop → 0 → 1
4. Select the desired Tech. Rep. Mode function.

<Exiting the Mode>

- Touch the "Exit" key.

4-3. Tech. Rep. Mode Menu Function Tree



4-4. Setting in the Tech. Rep. Mode

(1) Tech. Rep. Mode

- This function allows the Tech. Rep. to make various settings and adjustments.

1. System Set

- Set the environment for copying operations.

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted).</th></tr>
<tr><td>Auto Paper Configuration</td><td>Select the paper size selection scheme for automatic original size detection.
<table>
<tr><td>Inch/Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm
C: 203 mm</td><td>F: 330 mm
C: 210 mm</td><td>F: 330 mm
C: 216 mm</td><td>F: 330 mm
C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original. ▶ Copy Default available from User's Choice.
<table>
<tr><td>Simplex&Duplex</td><td>Permits selection of all copying modes.</td></tr>
<tr><td>Duplex Only</td><td>Permits selection of 2-sided copying modes only.</td></tr>
</table></td></tr>
<tr><td>Dry Key Set</td><td>Select whether to display the Dry key for “User Management” of Utility.
Notes:
• Scanner, Scanner & Drum: “Dehumidify” key is displayed.
• Disable: “Dehumidify” key is not displayed.
<table>
<tr><td>Scanner</td><td>Scanner&Drum</td><td>Disable</td></tr>
</table></td></tr>
<tr><td>Function Limit</td><td>Select whether to limit the functions to be set on the control panel or not.
<table>
<tr><td>ON</td><td>Enables the functions to set the number of copies to be made, paper source, zoom ratio, and image density.</td></tr>
<tr><td>OFF</td><td>Enables all functions (no Limit)</td></tr>
</table></td></tr>
</table>

2. Printer

- Make the necessary adjustments of the printer (engine).

Touch Panel Display	Setting (The default is **Highlighted**).
Edge Erase	Set the erase width on the leading, trailing, right, and left edge of the image. 0 to 5 mm (**4 mm**)
Loop Adjustment	Set the length of the loop to be formed in paper before the Synchronizing Rollers -5 to +5 mm (**0 mm**)
Image Density	Set the image density for the printer. The value set for this function becomes the central value of "Priority Density" of User's Choice. -3..... **0** .....+3 Lighter ◄——► Darker
ATDC Sensor Gain	Current: Shows the current ATDC control voltage. Set: Set the ATDC control voltage. ***Note:*** • *Be sure to record this value when I/C has been changed.* 123..... **155** .....186 T/C Greater ◄——► T/C Smaller
VG Adjust	Vary the Vg voltage to set the desired image density. -2..... **0** .....+2 Lighter ◄——► Darker

3. ADFR

- Make the necessary adjustments of ADFR.

Note:

- *For details, see Option service manual.*

Touch Panel Display	Setting (The default is **Highlighted**).
Original Stop Position	Adjust the document stop position in each of the ADF modes. -7..... **0** .....+7 Smaller ◄——► Greater
Registration Loop	Set the length of the loop to be formed in the original fed off the ADF before the Registration Roller. -5 mm..... **0** .....+5 mm Smaller ◄——► Greater

4. Scan-through ADF

- Make the necessary adjustments of AFR.

Note:

- *For details, see Option service manual.*

Touch Panel Display	Setting (The default is **Highlighted**).
Registration	Adjust registration in the main and sub-scanning directions of the ADF. Main Scanning (CD) -72 dot..... **0** .....+72 dot Smaller ◄——► Greater Sub Scanning (FD) -127 dot..... **0** .....+127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the scanning zoom ratio in the main and sub-scanning directions of the ADF. 0.990..... **0** .....1.000 Reduction direction ◄——► Enlargement direction

5. IR-Erasure Width
• Make the adjustment of original erase width on the IR side.

Note:
• *For details, see* DIS/REASSEMBLY, ADJUSTMENT

Touch Panel Display	Setting (The default is **Highlighted**).
IR-Erasure Width	Set the forced erasure width along the four edges of the paper. 0 mm..... **0** .....3 mm Smaller ◄——————► Greater

6. Book Center Erasure
• Adjust the center erase width in Book copying.

Note:
• *For details, see* DIS/REASSEMBLY, ADJUSTMENT

Touch Panel Display	Setting (The default is **Highlighted**).
Book Center Erasure	Adjust the center erase width. 2 mm..... **0** .....20 mm Smaller ◄——————► Greater

(2) System Input

• The function allows the Tech. Rep. to define the paper size input, and make settings.

Touch Panel Display	Setting (The default is **Highlighted**).
Paper Size Input	Set the paper size. <Procedure> 1. Select the paper source. 2. Select the paper size. If a nonstandard size is to be used, enter the paper size from the 10-Key Pad. 3. Touch “END” to validate the new setting.
Change Fixed Zoom	Change a fixed zoom ratio to a desired value. <Procedure> 1. Touch the key of the fixed zoom ratio to be changed. 2. Press the Clear key. Press the Interrupt key to undo the clearing operation, restoring the original setting. 3. Enter the new ratio from the 10-Key Pad. 4. Touch “Input” to validate the new setting.

<table>
<tr><td>Touch Panel Display</td><td>Setting (The default is Highlighted).</td></tr>
<tr><td>Machine Configuration</td><td>Displays the machine configuration status.</td></tr>
<tr><td>Technical Memo</td><td>Enter the serial number and other data.</td></tr>
<tr><td>Original Size Detecting Option</td><td>Select “ON” when the optional Original Size Detecting Sensor is mounted.<table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
</table>

(3) Administrator # Input

- Set an ID number for opening the “Admin. Management Mode” screen of Utility Mode from the 10-Key Pad.

(4) Counter

- Shows the number of copies made on each paper size or type.

<Clearing a Count>

1. Open the counter menu screen.
2. Select the counter to be cleared.
3. Press the Clear key.
4. Touch “END”.
   Press the Interrupt key to undo the clearing operation, restoring the original count.

✻ "I/C Life 1" and "I/C Life 2" of "PM" cannot be cleared. They are automatically reset when a new I/C is installed.

<Clearing All Counts of a Counter Type at Once>

1. Touch the “Counter Reset” key.
2. Select the counters to be cleared all at once.
3. Touch “OK”.

<table>
<tr><td>Touch Panel Display</td><td>Setting</td></tr>
<tr><td>Paper</td><td>Counts the number of sheets of paper used according to the size and type.
<table>
<tr><td colspan="2">Paper size</td></tr>
<tr><td>A3</td><td>11 x 17</td></tr>
<tr><td>B4</td><td>11 x 14</td></tr>
<tr><td>A4</td><td>Letter</td></tr>
<tr><td>B5</td><td>Legal</td></tr>
<tr><td>A5</td><td>Exec.</td></tr>
<tr><td>FLS</td><td>5-1/2 x 8-1/2</td></tr>
</table>
<table>
<tr><td>Paper Type</td></tr>
<tr><td>Normal</td></tr>
<tr><td>Recycle</td></tr>
<tr><td>Special</td></tr>
<tr><td>Not for 2-sided</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Jam</td><td>Counts the number of misfeeds that have occurred at different locations in the copier.
<table>
<tr><th>Display</th></tr>
<tr><td>MCBJ System
MCBJ Machine Only
1st Drawer
2nd Drawer
3rd Drawer
4th Drawer
5th Drawer</td></tr>
</table>
<table>
<tr><th>Display</th></tr>
<tr><td>Manual Feed
Vertical Transport
Separator
Fusing
Duplex Entrance
Duplex Feed
LCC Feed</td></tr>
</table>
<table>
<tr><th>Display</th></tr>
<tr><td>LCC Transport
Shift/Job Tray Transport
Shift/Job Tray Exit
Finisher Horizontal Transport
Finisher Transport
Finisher Exit
Finisher Staple</td></tr>
</table>
<table>
<tr><th>Display</th></tr>
<tr><td>Finisher Set Transport
MDBJ
ADFR (Scan-through ADF) Feed
ADFR (Scan-through ADF) Transport
ADFR Reverse
SADF</td></tr>
</table>
<table>
<tr><th>Display</th></tr>
<tr><td>Printer
Engine</td></tr>
</table>
✻ MDBJ: ADFR paper feed counter divided by ADFR misfeed counter
✻ Printer: No. of misfeeds occurred due to communication errors between memory and printer.
✻ Engine: No. of misfeeds occurred due to communication errors with the engine.</td></tr>
<tr><td>PM</td><td>Counts the frequency of use of each of the different parts of the copier.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life 1</td><td>No. of A4C copies made, translated from the period of time through which the I/C motor has been energized.</td></tr>
<tr><td>I/C Life 2</td><td>No. of A4C copies made, translated in terms of A4C length from the total FD length copied</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of times a sheet of paper is fed through</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of times a sheet of paper is fed through</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of times a sheet of paper is fed through</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>PM</td><td>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF</td><td>No. of single feeds</td></tr>
<tr><td>IR 1</td><td>No. of scan motions</td></tr>
<tr><td>IR 2</td><td>No. of scan motions</td></tr>
<tr><td>Job Tray</td><td>No. of cycles of feeding paper out into Job Tray</td></tr>
<tr><td>Toner Pages</td><td>No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
</table>
</td></tr>
<tr><td>Trouble</td><td>
Counts the number of malfunctions that have occurred at different parts of the copier.
<table>
<tr><th>Malfunction Code</th><th>Description</th><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C0000</td><td>Main Motor</td><td>C004E</td><td>Cooling Fan (Power Supply)</td></tr>
<tr><td>C0010</td><td>I/C Motor</td><td>C0070</td><td>Toner Bottle Motor</td></tr>
<tr><td>C0045</td><td>Cooling Fan</td><td>C0500</td><td>Fusing Warming-up</td></tr>
<tr><td>C004C</td><td>Ventilation Fan</td><td>C0510</td><td>Fuser Low Temperature</td></tr>
</table>
<table>
<tr><th>Malfunction Code</th><th>Description</th><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C0520</td><td>Fuser High Temperature</td><td>C0991</td><td>LCC Lift 1 Limit</td></tr>
<tr><td>C0650</td><td>Home Sensor</td><td>C0995</td><td>LCC Lift Motor</td></tr>
<tr><td>C0651</td><td>Left Sensor</td><td>C0999</td><td>LCC Lift 2 Limit</td></tr>
<tr><td>C0990</td><td>LCC Transport Motor</td><td>C099D</td><td>LCC Communication</td></tr>
</table>
<table>
<tr><th>Malfunction Code</th><th>Description</th><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C0B00</td><td>Transport Drive Motor</td><td>C0B48</td><td>Pressure Motor 1 Unit</td></tr>
<tr><td>C0B20</td><td>Stapler Unit</td><td>C0B4A</td><td>Pressure Motor 2 Unit</td></tr>
<tr><td>C0B30</td><td>Paper Aligning Bar Unit</td><td>C0B4D</td><td>Assist Tray Unit</td></tr>
<tr><td>C0B38</td><td>Paper Standard Board Unit</td><td>C0B4E</td><td>Transaction Tray Unit</td></tr>
</table>
<table>
<tr><th>Malfunction Code</th><th>Description</th><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C0B50</td><td>Staple 1 Unit</td><td>C0B80</td><td>Shift Unit</td></tr>
<tr><td>C0B54</td><td>Staple 2 Unit</td><td>C0BA0</td><td>Elevate Motor</td></tr>
<tr><td>C0B73</td><td>Punch Cam Motor Unit</td><td>C0F32</td><td>ATDC Sensor</td></tr>
<tr><td>C0B78</td><td>Punch Switching Motor Unit</td><td>C0F33</td><td>ATDC Adjust</td></tr>
</table>
<table>
<tr><th>Malfunction Code</th><th>Description</th><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C1038</td><td>Engine Connection</td><td>C13C0</td><td>I/C Initial Error</td></tr>
<tr><td>C1300</td><td>Polygon Motor</td><td>C13D0</td><td>EEPROM</td></tr>
<tr><td>C133A</td><td>Communication Error (G/A)</td><td>C13F0</td><td>HSYNC(SOS)</td></tr>
<tr><td>C133B</td><td>Communication Error (Option)</td><td>C18XX</td><td>Printer Controller Error</td></tr>
</table>
<table>
<tr><th>Malfunction Code</th><th>Description</th></tr>
<tr><td>C0214</td><td>Transcribable Volt.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Device</td><td>Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>FAX Print</td><td>No. of fax prints made</td></tr>
<tr><td>FAX Transmission</td><td>No. of prints made for fax transmission</td></tr>
<tr><td>Mail Transmission</td><td>No. of prints made for mail transmission</td></tr>
</table></td></tr>
<tr><td>Maintenance</td><td>Set different count values for the Maintenance Counter.
When the count reaches the preset value, the icon “⚠” appears in the Sub-Message Display.

<Procedure>
1. Touch “Maintenance (Set)”.
2. Press the Clear key to clear the current value.
Press the Interrupt key to undo the clearing operation, restoring the original value.
3. Enter the value from the 10-Key Pad.</td></tr>
</table>

(5) Function

- This function allows the Tech. Rep. to make the various function tests and adjustments.

Touch Panel Display	Setting
F1	<Paper Passage> A check is made for paper passage performance. <Procedure> 1. Select the paper source. 2. Press the Start key to start the paper passage cycle. 3. Press the Stop key to stop the paper passage cycle.
F2	This test is for factory adjustment only and should NOT be used.
F7-1	<Original Size Detecting Sensor Adjustment> Automatically adjusts the threshold level of the Original Size Detecting Sensor. ✻ For details, see DIS/REASSEMBLY, ADJUSTMENT.
F8	<ATDC Sensor Automatic Adjustment> This test is for factory adjustment only and should NOT be used.
F12	<Test Pattern> Outputs the test pattern. <Procedure> 1. Select the paper source. 2. Press the Start key to start the output sequence. 3. Press the Stop key to stop the output sequence.

(6) I/O Check

• Checks the function of sensors.

Touch Panel Display	Setting
Scan-through ADF	✻ For details, see Option service manual.
Scanner	✻ For details, see Option service manual.
ADFR	✻ For details, see Option service manual.
Mail Bin Finisher	✻ For details, see DIS/REASSEMBLY, ADJUSTMENT.
Printer	✻ For details, see DIS/REASSEMBLY, ADJUSTMENT.
Finisher	✻ For details, see Option service manual.
Sift Tray/Job Tray	✻ For details, see Option service manual.

(7) Movement Check

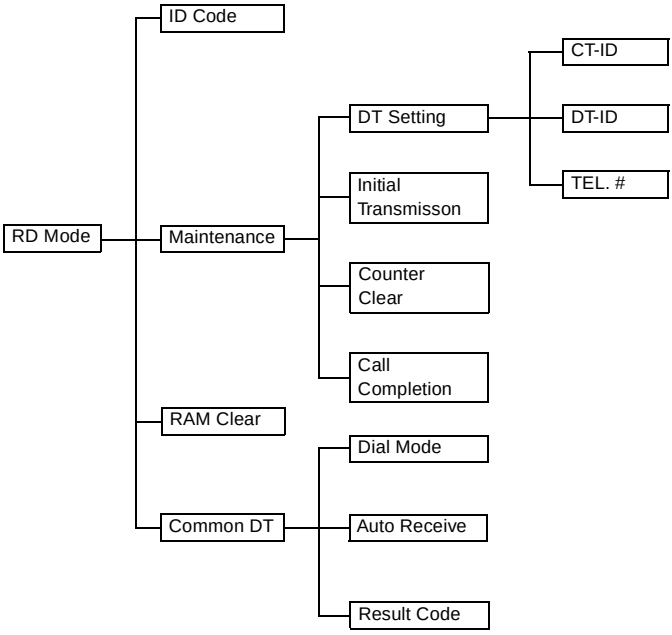
• Runs a specified mechanism to check for operation.

Touch Panel Display	Setting
ADF Paper Passage	Makes a paper passage check through the ADF. <Procedure> 1. Select the paper passage mode. 2. Place paper on the Document Feed Tray. 3. Press the Start key.
Scanner	Checks the Scanner for operation. • Drives the CCD (for factory adjustment only and should NEVER be used). • Turns ON the Exposure Lamp. • Moves the Scanner, the distance of movement being specified from the 10-Key Pad. <Procedure> 1. Enter the distance of movement from the 10-Key Pad. 2. Touch “Set”.
Exp. Lamp Check	Checks the intensity of the Exposure Lamp light.

(8) RD Mode

- Make the initial settings of the copier for the Data Terminal.

1. RD Mode Menu Function Tree



2. Setting in the RD Mode

Touch Panel Display	Setting (The default is **Highlighted**).
ID Code	Enter the ID code. <Procedure> 1. Touch the ID Code key. 2. Enter the ID code from the 10-Key Pad. 3. Touch the ID Code key. (This executes the transmission of MAINT. START to the Center.)
Maintenance	Displays the various setting screens.
DT Setting	Displays the setting screens for CT-ID, DT-ID, and telephone number.
CT-ID	Enter the ID number of the Center PC from the 10-Key Pad.
DT-ID	Enter the ID number of the Data Terminal from the 10-Key Pad.
TEL No.	Enter the telephone number of the modem connected to the Center PC.

Touch Panel Display	Setting (The default is **Highlighted**).
Initial Transmission	Performs the initial transmission from the PPC to the Center to check for correct communication after the Data Terminal has been set up.
Counter Clear	Clears the spare counter. <Procedure> 1. Touch the Counter Clear key. 2. Select the number assigned to the counter to be cleared.
Call Completion	Transmits the signal of notifying the completion of service job to the Center.
RAM Clear	Initializes the Data Terminal settings. YES / **NO**
Common DT	Displays the screens for communications settings.
Dial Mode	Sets the type of telephone line of the user. **Tone** / Pulse
Auto Receive	Sets the auto reception function. YES / **NO**
Result Code	Set the value according to the type of the modem on the copier.

(9) ROM Version

- Shows the ROM versions.

(10) Level History

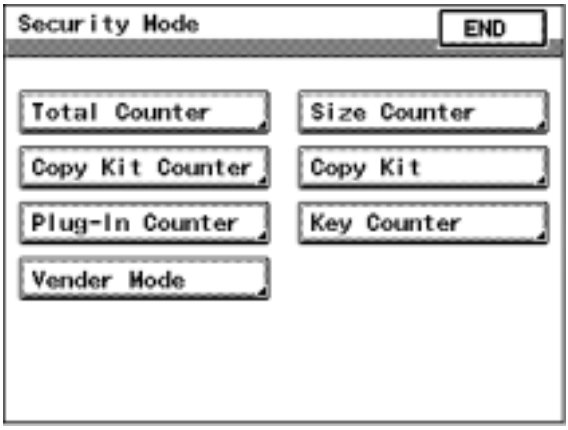
- Displays the various level histories.

Touch Panel Display	Setting
ATDC Set	Displays the voltage set with ATDC Sensor Automatic Adjustment.
ATDC Current	Displays the ATDC Sensor T/C setting in percentage.
Vg Current	Displays the current value of the grid voltage.
Vb Current	Displays the current value of the developing bias voltage.

5. SECURITY MODE

- Allows the Tech. Rep. to set the various counters.

5-1. Security Mode Menu Screen



4011P278CA

5-2. Security Mode Setting Procedure

<Procedure>

1. Show the Tech. Rep. mode menu screen.
2. Press the following keys in this order:
   Stop → 9
3. Select the particular function.

<Exiting the Mode>

- Touch the “END” key.

5-3. Settings in the Security Mode

<table>
<tr><td>Touch Panel Display</td><td>Setting (The default is Highlighted).</td></tr>
<tr><td>Total Counter</td><td>Select the condition by which the Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 Copy per 1 copy cycle</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size 1/2-sided copying</td></tr>
</table></td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3/11x17</td></tr>
<tr><td colspan="2">A3/B4/11x17/Legal</td></tr>
<tr><td colspan="2">A3/B4/11x17/11x14/Legal/FLS</td></tr>
</table></td></tr>
<tr><td>Copy Kit Counter</td><td>Select whether to enable or disable the “Copy Kit count.”
<table>
<tr><td>Mode 1</td><td>Disables the Copy Kit counter.</td></tr>
<tr><td>Mode 2</td><td>Copying not inhibited after the count reaches the present value.</td></tr>
<tr><td>Mode 3</td><td>Copying inhibited after the count reaches the present value.</td></tr>
</table></td></tr>
<tr><td>Copy Kit</td><td>Enter a value for the Copy Kit Counter.
When the current value reaches the set value, the following display is given.
• Copy Kit Counter setting
Mode 2: The icon “ ” appears in the sub-message display.
Mode 3: The maintenance call reminder “M4” appears and the initiation of a new copy cycle is inhibited.

<Procedure>
1. Touch “Set.”
2. Press the Clear key to clear the current setting.
If the setting is accidentally cleared, press the Interrupt key to undo the clearing operation.
3. Enter the desired value from the 10-Key Pad.
4. Touch “Current.”
5. Press the Clear key to clear the current value.
If the current value is accidentally cleared, press the Interrupt key to undo the clearing operation.</td></tr>
<tr><td>Plug-In Counter</td><td>Select the condition by which the Counter count is increased.
<table>
<tr><td>Copy Made</td><td>Copy Cycles</td></tr>
</table></td></tr>
</table>

Touch Panel Display	Setting (The default is **Highlighted**).
Key Counter	Set to “ON” if a Key Counter is plugged in. ***Note:*** • *If “OFF” is set, copies can be made without having to plugging the Key Counter into the socket.* ON / **OFF**
Vender Mode	Set the initial screen according to the type of vender mounted on the copier. **OFF** / Coin / Card

<Count-up Table>

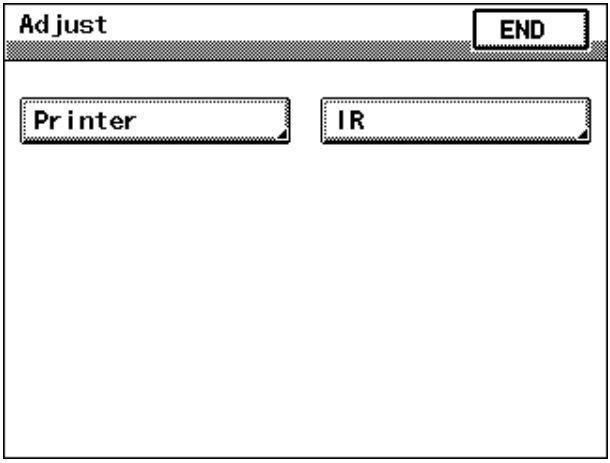
Copying		1-Sided						2-Sided					
Size		Size other than those set			Set size			Size other than those set			Set size		
Total		Mode			Mode			Mode			Mode		
		1	2	3	1	2	3	1	2	3	1	2	3
Total		1			1	2	2	2			2	4	4
Size		0			1	1	2	0			2	2	0
2-Sided Total		0			0			1	1	2	1	1	4
2-Sided Size		0			0			0			1	1	4
Total by account		1			1	2	2	2			2	4	4
Size by account		0			1	1	2	0			2	2	4
Pulg-in Counter	Counting copies	1			1	2	2	1	2	2	1	4	4
	Counting copy cycles	1			1	2	2	2			2	4	4

0: No count 1: 1 count 2: 2 counts 4: 4 counts

6. ADJUST MODE

- Used at the factory for making adjustments.

6-1. Adjust Mode Menu Screen



C1166P002CA

6-2. Adjust Mode Setting Procedure

<Procedure>

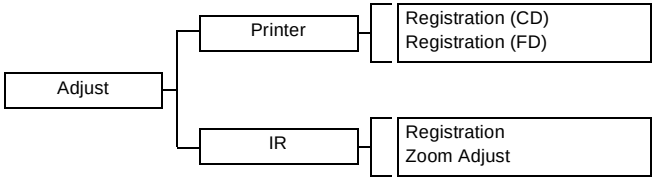
1. Show the Tech. Rep. mode menu screen.
2. Press the following keys in this order:
   Stop → Start
3. Select the desired function.

✻ Use the Access Mode key to enter a + or - sign.

<Exiting the Mode>

- Touch the “END” key.

6-3. Adjust Mode Function Tree



6-4. Settings in the Adjust Mode

(1) Printer

- Adjust functions relating to the printer.
- Runs a test print sequence.

Touch Panel Display	Setting
Registration (CD)	Adjust registration in the CD direction on the engine side. -4.0..... 0.....+4.0 Smaller ◄——► Greater
Registration (FD)	Adjust registration in the FD direction on the engine side 35 CPM -19..... 0.....+19 Smaller ◄——► Greater 25 CPM -26..... 0.....+26 Smaller ◄——► Greater

(2) IR

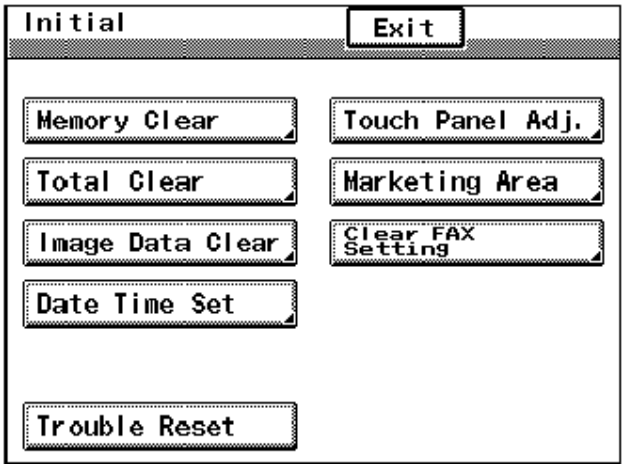
- Adjust functions relating to the I.R.

Touch Panel Display	Setting
Registration	Adjust registration in the CD and FD direction on the IR side. Main scanning (CD) -72 dot..... 0.....+72 dot Smaller ◄——► Greater Sub scanning (FD) -24 dot..... 0.....+127 dot Smaller ◄——► Greater
Zoom Adjust	Adjust the zoom ratio in the CD and FD direction on the IR side. 0.990.....1.000.....1.010 Smaller ◄——► Greater

7. INITIAL MODE

- Used to initialize the various service functions.

7-1. Initial Mode Menu Screen



4011P297CA

7-2. Initial Mode Setting Procedure

<Procedure>

1. Press the Warm Restart switch. Then "." appears at the center on the left side of the screen.
2. Enter "3" from the 10-Key Pad.
3. Select the desired function.

<Exiting the Mode>

- Touch the "Exit" key.

7-3. Settings in the Initial Mode

Touch Panel Display	Setting (The default is **Highlighted**).
Memory Clear	Clears all data. Yes / **No**
Touch Panel Adj.	Corrects deviation in the sensitive area of the Touch Panel. <Procedure> • Sequentially touch the four points marked with + on the screen as instructed by the arrow. ***Note:*** • *Be sure to touch the exact center of the + marking.*
Total Clear	Clears all of the electronic counters and Copy Track-related data. Yes / **No**
Marketing Area	Set the marketing area. MSJ / MC / MH / Others
Image Data Clear	Clears the image data. YES / **NO**
FAX Set Clear	Clears the fax-related settings. ✻ For details, see the FAX Service Manual.
Date Time Set	Set the date and time-of-day for Date Printing. Set the time zone. Set the Daylight Svgs. Time.(Summer time)
Trouble Reset	Resets the malfunction display.

7-4. Data/Conditions Cleared by Reset Switches

Data Cleared \ Clearing Method		Side Cover open/close	Trouble Reset	Memory Clear	Total Clear
Misfeed display		❍	–	❍	–
Malfunction display	Fusing	–	❍	❍	–
	Others	❍	❍	❍	–
Erratic operation/display		–	❍	❍	–
Job/Image		–	–	❍	–
User's Choice		–	–	❍	–
Tech.Rep.Mode		–	–	❍	–
Security Mode		–	–	❍	–
Touch Panel Adjust		–	–	❍	–
Copy Track function data		–	–	–	❍
Electronic Counter counts		–	–	–	❍

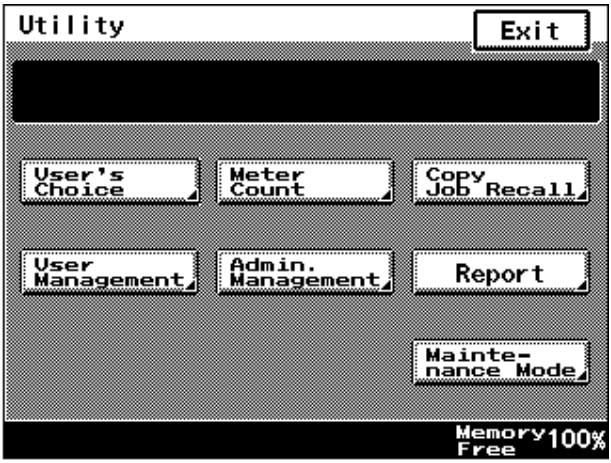
❍:Cleared –:Not cleared

8. UTILITY MODE

- Utility Mode is used to make various settings according to the user's need.

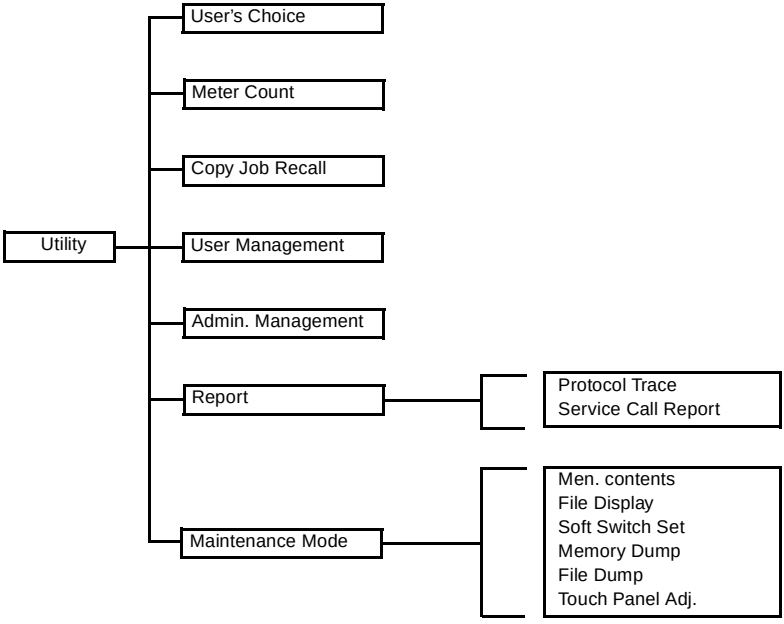
8-1. Utility Mode selection Screen

- Press the Utility key on the control panel.



4011P295CA

8-2. User's Choice Function Tree



8-3. Settings in the Utility Mode

Touch Panel Display	Setting
User's Choice	☞ Utility Mode S-6
Meter Count	☞ Utility Mode S-6
Copy Job Recall	☞ Utility Mode S-6
User Management	☞ Utility Mode S-6
Admin. Management	☞ Utility Mode S-6
Report	Protocol Trace ✻ For details, see the FAX Service Manual.
	Service Call Report Touching "Service Call Report" will let the copier produce currently set choice data of the various kinds.
Maintenance Mode	Men. contents ✻ For details, see the FAX Service Manual.
	File Display ✻ For details, see the FAX Service Manual.
	Soft Switch Set ☞ Soft Switch Set S-39
	Memory Dump ✻ For details, see the FAX Service Manual.
	File Dump Produces hard copy data used for analysis of internal data. ***Notes*** • Before attempting to produce the hard copy data, first enter the Initial Mode, exit from it, and then enter the Maintenance Mode. • The hard copy data involves about 100 pages.
	Touch Panel Adj. ☞ Initial Mode S-34

9. SOFT SWITCH SET

9-1. Soft Switch Initial Value Table

- The contents of the soft switches are described mainly for modes related to copying.
- The mark ✻ indicates a mode containing items that can be set according to the user's choice, for example.

Mode	HEX	Remark
400	00	Memory Recall, Mixed Original Detection
401	04	Language Selected
402	01	Simplex/Duplex, Original ▶ Copy Default, Auto Paper/Auto Size, Main Application, Priority Application (auto clear, screen after panel reset) Specification]
403	01	Multiple-in-1 and Booklet Copy Zoom, Plug-In Counter, ID Key Reset
404	01	Auto Panel Reset
405	0F	Energy Save Mode
406	**	Auto Power Off 3C: Initial value for 25-cpm Copier and 35-cpm Copier
407	01	LCD Back-light Off
408	00	Drawer Priority
409	08	4in1 Copy Order, Density Priority, Original Image Type ✻
410	44	Default Copy Output Levels, Density (ADF only), Default Copy Output Levels
411	00	Code Bit (copy), Priority Density ✻
412	08	Priority Sort Mode, Priority Stapling Mode (copy), Priority Punch Mode (copy), Inteligent Sorting ✻
413	14	FAX (Mail) Output Bin Specification, PC Print Output Bin Specification, PC Print Output Bin Specification, Copy Output Bin Specification, FAX (Mail) Output Bin Specification ✻
414	A0	Image Compression When Reserving Capacity In The Copy Memory (copy)
415	6C	Cofirmation Beep, Alam Volume ✻
416	60	Sound Volume Setting 3 Monitor Tone (copy), Orientation Of Images When Finisher Is Connected (copy), Overseas Scanner File Format, Disable Auto Shut Off ✻
417	63	Max Copy Sets, Set Copy Quantity Limit (copy)
418	78	Edge Erase, I/C Life Stop Specification, I/C Near-End-Of-Life Display Setting
419	00	(Not defined)
420	00	(Not defined)
421	**	Destination code (copy) 40: ME initial value
422	08	Total Counter, Size Counter, Copy Kit Counter
423	48	Plug-In Counter, Key Counter, Vender Mode, Original Size Detecting Option
424	18	Auto Paper configuration, FLS Paper, Copy Mode Limit (copy), "Small" Originals, Function Limit, Non-standard size original processing when ADFR and A4/Letter paper are selected (copy)
425	00	Image Quality Mode Adjustment (copy)
426	00	(Not defined)
427	**	Default Setting Country Classification (copy) **: Differs according to the set country.
428	00	(Not defined)
429	00	(Not defined)
430	78	Overseas Scanner Timeout Time ✻

9-2. Set Contents of Soft Switches

NOTES

- *The contents of the software switches are described mainly for modes related to copying.*
- *The mark ✻ indicates a mode containing items that can be set according to the user's choice, for example.*
- *The highlighted areas are the initial settings.*

Mode	Initial value	
400	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 0	HEX: 00

Bit	Function	Logic		Description
		0	1	
7	Memory Recall	**OFF**	ON	[ON/OFF] selection for storing the image data and recalling the image after the end of copying.
6	Mixed Original Detection	**OFF**	ON	Selection of mixed original mode that has priority when the power is ON and the Panel Reset key is pressed.
5-0		**Fixed**		Setting change inhibit

Mode	Initial value	
401	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 1 0 0	HEX: 04

Bit	Function	Logic		Description	
		0	1		
7-2	Language Selected	Bit7-2: 000000		Japanese	Selects the language to be displayed on the touch panel.
			000001	**English**	
			000010	Arbitrary setting	
			'		
			111111		
5-0		**Fixed**		Setting change inhibit	

Mode	Initial value	
402	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 1	HEX: 01

Bit	Function	Logic		Description	
		0	1		
7	Simplex/Duplex	**1-Sided**	2-Sided		
6	Original ▶Copy Default	**Bit6-5:**	**00**	**1-Sided**	
5			01	2-Sided	
			other	Setting inhibit	
4	Auto Paper/Auto Size ✻	**Bit4-3:**	**00**	**APS**	APS: Auto paper mode AMS: Auto magnification mode
3			01	AMS	
			10	Setting inhibit	
			11	Manual	
2	Main Application ✻	**Copy**	Printer	Sets the print form for overseas PC printing. Copy: All PC prints are output together after data is received. Printer: PC prints are output successively each time data is received.	
1	Priority Application (auto clear, screen after panel reset) Specification ✻	Bit1-0:	00	FAX	Sets the initial status screen (copy, FAX, AUTO or scanner).
0			**01**	**COPY**	
			10	AUTO	
			11	Scanner	

Mode	Initial value	
403	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 1	HEX: 01

Bit	Function	Logic		Description
		0	1	
7	Multiple-in-1 and Booklet Copy Zoom	**Recommended magnification**	Full Size	Sets magnification when 2in1, 4in1, booklet or 2in1 division is selected.
6-1		**Fixed**		Setting change inhibit
0	Plug-In Counter,ID Key Reset	OFF	**ON**	[ON/OFF] selection of panel reset when Access Mode key is pressed.

Mode	Initial value	
404	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 1	HEX: 01

Bit	Function	Logic		Description	
		0	1		
7	Auto Panel Reset	Bit7-0:			Setting of whether or not auto clear takes place after the specified time from the end of copying or a key operation and also the time setting. 1-minute steps
6		00000000		No Reset	
5		**00000001**		**1 min.**	
4		'			
3		11110000		240 min.	
2		11111111		30 sec.	
1		Other		Setting inhibit	
0					

Mode	Initial value	
405	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 1 1 1 1	HEX: 0F

Bit	Function	Logic		Description	
		0	1		
7	Energy Save Mode	Bit7-0:			Setting of auto preheat time after the specified time from the end of copying or a key operation. 1-minute steps
6		00000000		Setting inhibit	
5		00000001		1 min.	
4		'			
3		**00001111**		**15 min.**	
2		'			
1		11110000		240 min.	
0		Other		Setting inhibit	

Mode		Initial value								
406	25-cpm Copier 35-cpm Copier	Bit:	7 0	6 0	5 1	4 1	3 1	2 1	1 0	0 0	HEX: 3C

Bit	Function	Logic		Description	
		0	1		
7	Auto Power Off	Bit7-0:			• Setting of whether or not to cut OFF the power to the machine after the specified time from the end of copying or a key operation, and also the time setting • When MODE 416 Bit0 "Auto power off cancel" is set to "Enabled", the setting becomes "No". 1-minute steps No FAX: Auto power OFF With FAX: Heater OFF Initial value for 25-cpm Copier and 35-cpm Copier
6		00000000		OFF	
5		00000001		1 min.	
4		'			
3		**00001110**		**30 min. *1**	
2		'			
1		**00111100**		**60 min. *2**	
0		'			
		11110000		240 min.	
		Other		Setting inhibit	

Mode	Initial value								
407	Bit:	7 0	6 0	5 0	4 0	3 0	2 0	1 0	0 1	HEX: 01

Bit	Function	Logic		Description	
		0	1		
7	LCD Back-light Off	Bit7-0:			Setting of the back light OFF time after the specified time from the end of a key operation 1-minute steps.
6		00000000		Setting inhibit	
5		**00000001**		**1 min.**	
4		'			
3		11110000		240 min.	
2		Other		Setting inhibit	
1					
0					

Mode	Initial value								
		7	6	5	4	3	2	1	0
408	Bit:	0	0	0	0	0	0	0	0
									HEX: 00

Bit	Function	Logic			Description	
		0	1			
7	Drawer Priority	Bit7-4:				Setting of paper source selected preferentially in the APS (auto paper mode) or the manual mode.
6		**0000**			**1st Drawer**	
5		0001			2nd Drawer	
4		0010			3rd Drawer	
		0011			4th Drawer	
		0100			5th Drawer	
		1010			Manual Feed	
		1100			LCC	
		Other			Setting inhibit	
3-0		**Fixed**			Setting change inhibit	

Mode	Initial value								
		7	6	5	4	3	2	1	0
409	Bit:	0	0	0	0	1	0	0	0
									HEX: 08

Bit	Function	Logic			Description	
		0	1			
7	4in1 Copy Order ✻	Bit7-6:				Setting of image layout sequence for 4in1 copy operation. Pattern 1 (1 2 / 3 4) Pattern 2 (1 3 / 2 4) 35-cpm Copier only
6		**00**			**Pattern 1**	
		01			Pattern 2	
		Other			Setting inhibit	
5	Density Priority	**AE**	Manual		Density mode setting	
4-1	Original Image Type	Bit5-3:		0000	Text/Photo	When MODE 409 Bit5 is set to "AE (auto)", the "Photo mode" cannot be set.
		0100			**Text**	
		1000			Photo	
		1100			Special image quality	
		Other			Setting inhibit	
0		**Fixed**			Setting change inhibit	

Mode	Initial value	
410	Bit: 7 6 5 4 3 2 1 0 0 1 0 0 0 1 0 0	HEX: 44

Bit	Function	Logic		Description	
		0	1		
7	Default Copy Output Levels	Bit7-6:	00	Darker	Selection of level in auto density mode.
6			**01**	**Normal**	
			10	Setting inhibit	
			11	Lighter	
5		**Fixed**		Setting change inhibit	
4	Density (ADF only)	**Normal**	Black streak prevention	Normal: Image is read at the specified density. Black streak prevention: Image is read at a "lighter" density than the specified density.	
3-0	Default Copy Output Levels	Bit3-0:	0000	EXP 1	Setting of the manual density level selected when the mode is initialized, and also the level selected when the mode is changed from auto density to manual density. EXP1 [Lighter] ↓ EXP5 [Normal] ↓ EXP9 [Darker]
			0001	EXP 2	
			0010	EXP 3	
			0011	EXP 4	
			0100	**EXP 5**	
			0101	EXP 6	
			0110	EXP 7	
			0111	EXP 8	
			1000	EXP 9	
			Other	Setting inhibit	

Mode	Initial value	
411	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 0	HEX: 00

Bit	Function	Logic		Description	
		0	1		
7	Code Bit (copy)	**+**	-	Sets the + or - direction of Priority Density of MODE 411 Bit2-0.	
6-3		**Fixed**		Setting change inhibit	
2-0	Priority Density ✻	**Bit2-0:**	**000**	0	Sets the image density for making a print, by varying the developing bias.
			001	1	
			010	2	
			011	3	
			Other	Setting inhibit	

Mode	Initial value								
412	Bit:	7 0	6 0	5 0	4 0	3 1	2 0	1 0	0 0	HEX: 08

Bit	Function	Logic		Description	
		0	1		
7	Priority Sort Mode ✻	**Bit7-6:**	**00**	**Non Sort**	Selection of the paper exit mode that has priority when the paper exit system option is installed.
6			01	sort	
			10	Setting inhibit	
			11	Group	
5	Priority Stapling Mode (copy)	**OFF**	ON	Can be set simultaneously with a mode other than "Non-sort" of MODE 412 Bit 7-6.	
4	Priority Punch Mode (copy) ✻	**OFF**	ON	Can be set simultaneously with each mode of MODE 412 Bit 7-6.	
3	Intelligent Sorting ✻	OFF	**ON**	Setting of changeover, or no changeover, between sort and non-sort according to the number of originals and the key operation.	
2-0		**Fixed**		Setting change inhibit	

Mode	Initial value								
413	Bit:	7 0	6 0	5 0	4 1	3 0	2 1	1 0	0 0	HEX: 14

Bit	Function	Logic		Description	
		0	1		
7	FAX (Mail) Output Bin Specification ✻	**Bit7-6:**	**00**	**1st Drawer**	• Setting of tray to exit FAX (mail) prints when a finisher is installed. • "Option tray" is effective when the option tray is installed.
6			01	Elevator tray	
			10	Option tray	
			11	Setting inhibit	
5	PC Print Output Bin Specification ✻	Bit5-4:	00	1st Drawer	• Setting of tray to exit PC prints when a finisher is installed. • "Option tray" is effective when the option tray is installed.
4			**01**	**Elevator tray**	
			10	Option tray	
			11	Setting inhibit	
3	PC Print Output Bin Specification ✻	**1 bin**	2 bins	Setting of the bin to exit PC prints when a job tray is installed.	
2	Copy Output Bin Specification ✻	1 bin	**2 bins**	Setting of the bin to exit copies when a job tray is installed.	
1	FAX (Mail) Output Bin Specification ✻	**1 bin**	2 bins	Setting of the bin to exit FAX (mail) prints when a job tray is installed.	
0		**Fixed**		Setting change inhibit	

Mode	Initial value								
		7	6	5	4	3	2	1	0	
414	Bit:	1	0	1	0	0	0	0	0	HEX: A0

Bit	Function	Logic		Description	
		0	1		
7	Image Compression When Reserving Capacity In The Copy Memory (copy)	Bit7-4:			Indicates the memory reserve capacity per copy converted into image compression, and reserves memory capacity before start of scanning, according to the set compression corresponding to the original used.
6			0101	0.5	
5			0110	0.6	
4			0111	0.7	
			1000	0.8	
			1001	0.9	
			1010	**1.0**	
			1011	1.1	
			1100	1.2	
			1101	1.3	
			Other	Setting inhibit	
3-0		**Fixed**		Setting change inhibit	

Mode	Initial value								
		7	6	5	4	3	2	1	0	
415	Bit:	0	1	1	0	1	1	0	0	HEX: 6C

Bit	Function	Logic		Description	
		0	1		
7	Cofirmation Beep ✻	Bit3-1:	000	0 (No tone)	Setting of sound volume of tone emitted when key is pressed.
6			001	1	
5			010	2	
			011	**3**	
			100	4	
			101	5	
			Other	Setting inhibit	
4	Alam Volume ✻	Bit3-1:	000	0 (No tone)	Setting of sound volume of alarm tone.
3			001	1	
2			010	2	
			011	**3**	
			100	4	
			101	5	
			Other	Setting inhibit	
1-0		**Fixed**		Setting change inhibit	

Mode	Initial value								
416	Bit:	7 0	6 1	5 1	4 0	3 0	2 0	1 0	0 0	HEX: 60

Bit	Function	Logic		Description	
		0	1		
7	Sound Volume Setting 3 Monitor Tone (copy) ✻	Bit3-1:	000	0 (No tone)	Line monitor tone volume setting
6			001	1	
5			010	2	
			011	**3**	
			100	4	
			101	5	
			Other	Setting inhibit	
4	Orientation Of Images When Finisher Is Connected (copy)	**Not facing each other**	Facing each other	Sets the orientation of the image when a finisher is connected.	
3-2		**Fixed**		Setting change inhibit	
1	Overseas Scanner File Format ✻	**TIFF**	PDF	Sets the file format used with an overseas scanner. (For maintenance use by the administrator)	
0	Disable Auto Shut Off	**NO**	YES	Setting that enables or disables to select "Disabled" setting for Auto Shut Off function.	

Mode	Initial value								
417	Bit:	7 0	6 1	5 1	4 0	3 0	2 0	1 1	0 1	HEX: 63

Bit	Function	Logic		Description	
		0	1		
7	Max Copy Sets	**OFF**	ON	Setting for placing or not placing an input limit on the copy quantity	
6-0	Set Copy Quantity Limit (copy)	Bit6-0:			Sets the limit quantity when Max. Copy Sets of MODE 417 Bit 7 is set to "Yes".
		0000000		Setting inhibit	
		0000001		1	
		'			
		1100011		**99**	
		Other		Setting inhibit	

Mode	Initial value									
418	Bit:	7 0	6 1	5 1	4 1	3 1	2 0	1 0	0 0	HEX: 78

Bit	Function	Logic		Description	
		0	1		
7		**Fixed**		Setting change inhibit	
6	Edge Erase	Bit6-5:	00	0 mm	When a BS scan (including ADFR) is performed 1. In the APS/AMS mode, exactly the width set from the detected original size frame is erased. 2. In the manual mode, exactly the set width from the frame of the read range determined by the paper size and the magnification is erased (white mask). • Does not function during an NADF read operation. • Functions in all modes.
5			01	1 mm	
			10	2 mm	
			11	**3 mm**	
4	I/C Life Stop Specification	Stop	**Do not stop**	Sets whether to stop or not stop a print operation when the imaging unit reaches the end of its life.	
3	I/C Near-End-Of-Life Display Setting	Do not display	**Display**	Sets whether or not to display the fact that the imaging unit is approaching the end of its life.	
2-0		**Fixed**		Setting change inhibit	

Mode		Initial value								
421	MC	Bit:	7 0	6 0	5 1	4 0	3 0	2 0	1 0	0 0	HEX: 20
	MH	Bit:	7 0	6 1	5 0	4 0	3 0	2 0	1 0	0 0	HEX: 40

Bit	Function	Logic		Description	
		0	1		
7-5	Destination Code (copy)	Bit5-3:	000	MSJ	Changes set values such as paper size and magnification. MC initial value: 001 ME initial value: 010
			001	**MC**	
			010	**ME**	
			011	Other	
			100	Line adjustment	
			Other	Setting inhibit	
4-0		**Fixed**		Setting change inhibit	

Mode	Initial value	
422	Bit: 7 6 5 4 3 2 1 0 0 0 0 0 1 0 0 0	HEX: 08

Bit	Function	Logic		Description	
		0	1		
7	Total Counter	**Bit7-6:**	**00**	**Mode 1 (standard)**	Setting of total counter counting method.
6			01	Mode 2 (ME)	
			10	Mode 3	
			11	Setting inhibit	
5	Size Counter	Bit5-3:	000	Do not count	Setting of paper size to be counted by size counter.
4			**001**	**A3**	
3			010	A3/B4	
			011	A3/B4/FLS	
			100	A6	
			Other	Setting inhibit	
2	Copy Kit Counter	**Bit2-1:**	**00**	**Mode 1 (Do not count)**	Sets whether or not the copy kit counter is to count, and also whether or not copying is to be inhibited. Mode 1: Does not count. Mode 2: Counts. (Copying takes place when the set value is reached.) Mode 3: Counts. (Copying is inhibit when the set value is reached.)
1			01	Mode 2 (Count 1)	
			10	Mode 3 (Count 2)	
			11	Setting inhibit	
0		**Fixed**		Setting change inhibit	

Mode	Initial value	
423	Bit: 7 6 5 4 3 2 1 0 0 1 0 0 1 0 0 0	HEX: 48

Bit	Function	Logic		Description	
		0	1		
7	Plug-In Counter	**Copy Made**	Copy Cycles	Setting of threshold value of copy kit counter, and viewing count value.	
6	Key Counter	ON	**OFF**	Use of key counter or vender.	
5	Vender Mode	**Bit5-4:**	**00**	**Key counter**	Sets which of the key counter or vender to set when these are used.
4			01	Coin vender	
			1	Card keeper	
			11	Setting inhibit	
3	Original Size Detecting Option	ON	**OFF**		Specifies whether or not original size detecting sensor is applicable to option.
2-0		**Fixed**		Setting change inhibit	

Mode	Initial value	
424	Bit: 7 6 5 4 3 2 1 0 0 0 0 1 1 0 0 0	HEX: 18

Bit	Function	Logic		Description	
		0	1		
7	Auto Paper Configuration	**Mixed**	Limited	Sets whether or not the original size is to be rounded off for destination in the auto paper mode.	
6	FLS Paper	**Bit6-5:**	**00**	**210×330**	Setting of sizes handled as FLS.
5			01	203 × 330	
			10	216 × 330	
			11	220 × 330	
4	Copy Mode Limit (copy)	YES	**NO**	Sets whether or not to inhibit setting of "two-sided copy" in the priority copy mode.	
3	"Small" Originals	Copy disabled	**Copy enabled**	Sets whether to enable copying or emit an alarm when an original that is smaller than the minimum detectable size is loaded.	
2	Function Limit	**NO**	YES	Sets whether or not to disable the settings of some of the copy mode functions (application, original copy).	
1	Non-standard size original processing when ADFR and A4/Letter paper are selected (copy)	**Process**	Do not process	Setting when truncated A4T original (short dimension about 210 mm (long dimension about 250 mm) is copied using ADFR.	
0		**Fixed**		Setting change inhibit	

Mode	Initial value								
425	Bit:	7 0	6 0	5 0	4 0	3 0	2 0	1 0	0 0	HEX: 00

Bit	Function	Logic		Description	
		0	1		
7 to 4		**Fixed**		Setting change inhibit	
3	Image Quality Mode Adjustment (copy)	**Bit3-0:**	**0000**		Setting of image density for printing. Enables setting of special image quality mode for Original Image Type of MODE 409 Bit4-1.
2			'		
1			1000		
0					

Mode	Initial value								
427	Bit:	7 0	6 0	5 0	4 0	3 0	2 0	1 0	0 0	HEX: 00

Bit	Function	Logic		Description	
		0	1		
7 to 3	Default Setting Country Classification (copy)	**Bit7-5:**		**Arbitrary setting**	Setting differs depending upon the country.
2 to 0		**Fixed**		Setting change inhibit	

Mode	Initial value								
430	Bit:	7 0	6 1	5 1	4 1	3 1	2 0	1 0	0 0	HEX: 78

Bit	Function	Logic		Description	
		0	1		
7 to 1	Overseas Scanner Timeout Time ✻	Bit7-0:			Setting of overseas scanner SMTP timeout time 1-second steps.
		0000000		Setting inhibit	
		0000001		1 min.	
		'			
		0111100		**60 min.**	
		'			
		11110000		120 min.	
		Other		Setting inhibit	
0		**Fixed**		Setting change inhibit	

TROUBLESHOOTING

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1. INTRODUCTION

1-1. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in the numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check	Result	Action
1	~	YES	~
2		↑	

Go to step 2 if you answered No.

Pattern 2

Step	Check	Result	Action
1	~	YES	~
		NO	~
2			↑

Go to step 2 if it checks okay.

2. I/O CHECK

2-1. Electrical Components Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular electrical component is fully operational, this copier provides the following provision. Checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to an electrical component.

<Procedure>

1. When a misfeed or malfunction occurs, identify on the circuit diagram accompanying the text the electrical component that is probably responsible for the problem.
2. Select “I/O Check” from the “Tech. Rep. Mode” menu. Then, select the screen that contains the electrical component picked out in step 1 above. (See “Tech. Rep. Mode” contained in SWITCHES ON PWBs, TECH. REP. SETTINGS.)
3. Check the input data to determine if the signal is correctly input.

<Electrical Component Check Procedure Through Checking Input Data>

Example

When a paper misfeed occurs in the paper take-up section of the copier, the Synchronizing Roller Sensor is considered to be responsible for it.

<Procedure>

1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to the Synchronizing Roller Sensor is “Timing Roller.”
3. Select “I/O Check” from Tech. Rep. Mode and then “Printer.” Now, access the screen that contains “Timing Roller.”
4. Check that the input port data of “Timing Roller” is “0” (sensor is blocked).
5. Move the Synchronizing Roller Sensor actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from “0” to “1.”

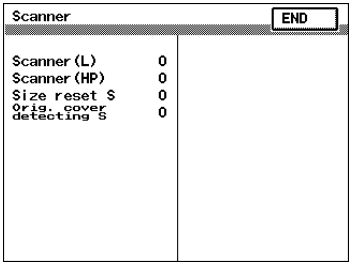
1: Synchronizing Roller Sensor is operational. 0: Synchronizing Roller Sensor is faulty.

2-2. I/O Check List

<I/O Check Screens>

- The following screen is only typical and it may be different from what is shown on each individual copier.

IR



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<I/O Check List>

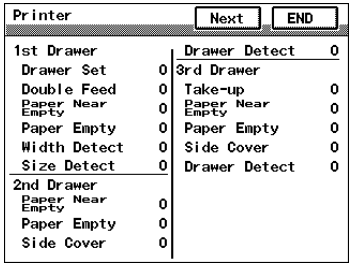
IR

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
			1	0				
PC13	Scanner (L)	Scanner Home Position Sensor 2	Blocked	Unblocked	MFB2 Board MFB2	—	—	CN14MFB2-27
PC12	Scanner (HP)	Scanner Home Position Sensor 1	At home	Not at home		—	—	CN14MFB2-26
S6	Size reset S	Size Reset Switch	When closed	When opened		—	—	CN14MFB2-24
PC14	Orig. cover detecting S	Original Cover Detecting Sensor	Within 15°	15° or more		—	—	CN14MFB2-25

<I/O Check Screens>

- The following screen is only typical and it may be different from what is shown on each individual copier.

Printer



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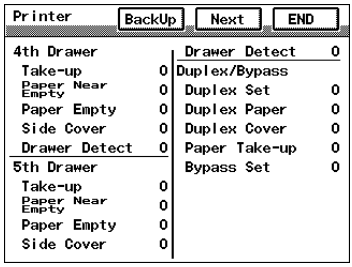
"BackUp"

"Next"



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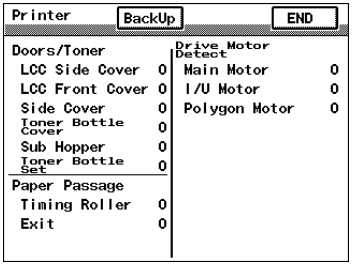
"Next"

"BackUp"



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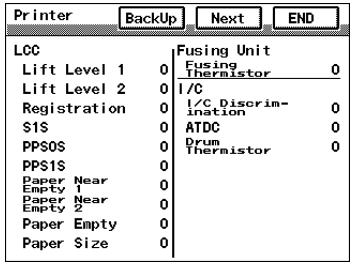
"Next"

"BackUp"



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<I/O Check List>
Printer

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
PC6	1st Drawer	Drawer Set	1st Drawer Set Sensor		In position	Out of position	Master Board PWB-A	IC1A	P01	PJ3A-5B
PWB-H		Double Feed	Double Feed Detecting Board *1		Blocked *2	Unblocked		IC1A	P02	PJ4A-2
PC5		Paper Near Empty	1st Drawer Paper Near Empty Sensor		Unblocked	Blocked		IC1A	P03	PJ3A-2B
PC4		Paper Empty	1st Drawer Paper Empty Sensor		Paper not present	Paper present		IC1A	P05	PJ15A-14A
S5		Width Detect	Paper Size Detecting Sensor (CD)		Max. width	Width other than max.		IC1A	P33	PJ3A-8B
PWB-I		Size Detect	Paper Size Detecting Board		Analog value			IC1A	P103/ AN3	PJ15A-6B to PJ15A-9B
PC3/ PC103	2nd Drawer	Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked	Control Board PWB-A	IC1A	P86	PJ3A-11A
PC2/ PC102		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1A	P85	PJ3A-14A
PC4/ PC104		Side Cover	Door Set Sensor		When opened	When closed		IC1A	PC2	PJ3A-7B
SW D		Drawer Detect	Drawer Set Switch	When PF-118 is used	In position: 3 displayed Out of position: 0 displayed			IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
				When PF-119 is used	In position	Out of position		IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
PC1	3rd Drawer	Take-up	Paper Take-Up Sensor		Paper present	Paper not present	Control Board PWB-A	IC1A	PB7	PJ3A-5A
PC3		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1A	P86	PJ3A-11A
PC2		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1A	P85	PJ3A-14A
PC4		Side Cover	Door Set Sensor		When opened	When closed		IC1A	PC2	PJ3A-7B
SW D		Drawer Detect	Drawer Set Switch	When PF-118 is used	In position: 3 displayed Out of position: 0 displayed			IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
				When PF-119 is used	In position	Out of position		IC1A	PC0 PC1	PJ3A-4B PJ3A-1B

*1: The Double Feed Sensor is an electrical component for the 35-cpm copier.
*2: “1” is displayed when the Double Feed Sensor is blocked and, at the same time, the Main Motor is energized.

Symbol	Panel Display		Parts/Signal Name		Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
					1	0				
PC1	4th Drawer	Take-up	Paper Take-Up Sensor		Paper present	Paper not present	Control Board PWB-A	IC1A	PB7	PJ3A-5A
PC3		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1A	P86	PJ3A-11A
PC2		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1A	P85	PJ3A-14A
PC4		Side Cover	Door Set Sensor		When opened	When closed		IC1A	PC2	PJ3A-7B
SW D		Drawer Detect	Drawer Set Switch	When PF-118 is used	In position: 3 displayed Out of position: 0 displayed			IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
				When PF-119 is used	In position	Out of position		IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
PC1	5th Drawer	Take-up	Paper Take-Up Sensor		Paper present	Paper not present	Control Board PWB-A	IC1A	PB7	PJ3A-5A
PC3		Paper Near Empty	Paper Near Empty Sensor		Unblocked	Blocked		IC1A	P86	PJ3A-11A
PC2		Paper Empty	Paper Empty Sensor		Paper not present	Paper present		IC1A	P85	PJ3A-14A
PC4		Side Cover	Door Set Sensor		When opened	When closed		IC1A	PC2	PJ3A-7B
SW D		Drawer Detect	Drawer Set Switch	When PF-118 is used	In position: 3 displayed Out of position: 0 displayed			IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
				When PF-119 is used	In position	Out of position		IC1A	PC0 PC1	PJ3A-4B PJ3A-1B
—	Duplex/ Bypass	Duplex Set	Duplex Unit Set signal		In position	Out of position	Master Board PWB-A	IC1A	P91	PJ2A-3B
PC2		Duplex Paper	Duplex Unit Transport Sensor		Paper present	Paper not present		IC1A	P92	PJ2A-2B
PC1		Duplex Cover	Duplex Unit Door Set Sensor		When opened	When closed		IC1A	P90	PJ2A-1B
PC8		Paper Take-up	Manual Feed Paper Take-Up Sensor		Paper present	Paper not present		IC1A	P00	PJ2A-7B
—		Bypass Set	Manual Bypass Tray Set signal		In position	Out of position		IC1A	P30	PJ2A-9B

Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
LS1	LCC	Lift Level 1	Lift-Up Sensor 1	At upper limit	Not at upper limit	LCC Control Board PWB-A	IC4A	P74/ ANI4	CN4A-6
LS2		Lift Level 2	Lift-Up Sensor 2	At upper limit	Not at upper limit		IC4A	P73/ ANI3	CN4A-9
RSEN		Registration	Registration Sensor	Paper present	Paper not present		IC4A	P22/ INTP1	CN4A-2
S1		S1S	Paper Standby Position Sensor	Paper present *3	Paper not present *3		IC4A	P23/ INTP2/ CI	CN3A-5
PPS0		PPS0S	LCC Paper Take-Up Sensor	Paper present	Paper not present		IC4A	P24/ INTP3	CN4A-11
PPS1		PPS1S	Paper Empty Sensor 1	Paper present	Paper not present		IC4A	P25/ INTP4/ ASCK	CN3A-2
RS1		Paper Near Empty 1	Paper Near Empty Sensor 1	Blocked	Unblocked		IC4A	P75/ ANI5	CN6A-12
RS2		Paper Near Empty 2	Paper Near Empty Sensor 2	Blocked	Unblocked		IC4A	P76/ ANI6	CN5A-5
EMP		Paper Empty	Paper Empty Sensor 2	Paper present	Paper not present		IC4A	P72/ ANI2	CN3A-8
—		Paper Size	DIP switch	Letter C: 0 displayed A4C: 1 displayed B5C: 2 displayed			IC4A	P13 P14 P15	—
TH1	Fusing Unit	Fusing Thermistor	Fusing Roller Thermistor	Analog value		Master Board PWB-A	IC1A	P107/ AN7	PJ5A-6
—	I/C	I/C Discrimination	I/C Type Detection signal	Analog value			IC1A	P100/ AN0	PJ6A-7 PJ6A-8
UN2		ATDC	ATDC Sensor	Analog value			IC1A	P106/ AN6	PJ6A-3
TH2		Drum Thermistor	I/C Thermistor	Analog value			IC1A	P104/ AN4	PJ3A-10A

*3: The display of 1 or 0 is selected only while LCC Transport Motor is being energized.

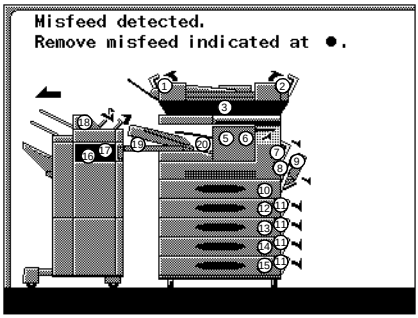
Symbol	Panel Display		Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
				1	0				
SIDE	Doors/ Toner	LCC Side Cover	Door Set Sensor	When opened	When closed	LCC Control Board PWB-A	IC4A	P34/ T00	CN3A-12
FRONT		LCC Front Cover	LCC Set Sensor	Out of position	In position		IC4A	P35/ T01	CN6A-9
S2		Side Cover	Side Cover Interlock Switch 1	When opened	When closed	Master Board PWB-A	IC1A	P31	—
PC11		Toner Bottle Cover	Toner Bottle Cover Sensor	When opened	When closed		IC2A	P3	PJ3A-10B
S4		Sub Hopper	Sub Hopper Toner Empty Switch	Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed			IC1A	P06	PJ3A-15B
PC10		Toner Bottle Set	Toner Bottle Home Position Sensor	At home	Not at home		IC1A	P40	PJ15A-4B
PC2	Paper Passage	Timing Roller	Synchronizing Roller Sensor	Paper present	Paper not present		IC1A	P41	PJ3A-7A
PC3		Exit	Paper Exit Sensor	Paper present	Paper not present		IC1A	P77	PJ3A-12A
M2	Drive Motor Detect	Main Motor	Main Motor/Lock	When energized	When deenergized		IC1A	P43	PJ5A-2
M1		I/U Motor	I/C Motor/Lock	When energized	When deenergized		IC1A	P42	PJ5A-4
M5		Polygon Motor	Polygon Motor/ Lock	When energized	When deenergized		IC1A	P47	PJ9A-4

3. PAPER TRANSPORT FAILURE

3-1. Paper Misfeed

- When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

⊗ display	Misfeed location
○ display	Paper location



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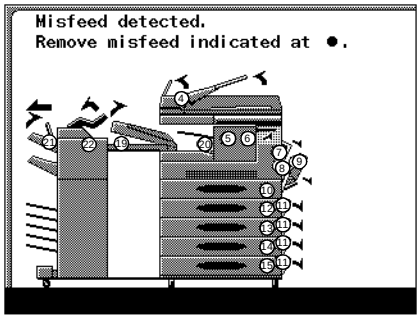

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⊗ or ○ Display	Misfeed/Paper Location	Ref. Page
1	See the relevant option service manual.	
2		
3		
4		
5		
6		
7	Separator, Fusing Unit, Exit	☞ T-18
8	Manual Bypass take-up	☞ T-16
9	Duplex turnover, Duplex take-up	☞ T-26
10	1st Drawer take-up	☞ T-14
11	Transport	☞ T-20
12	2nd Drawer take-up	☞ T-20
13	3rd Drawer take-up	☞ T-20 or T-23
14	4th Drawer take-up	☞ T-20 or T-23
15	5th Drawer take-up	☞ T-20
16	See the relevant option service manual.	
17		
18		
19		
20		
21		
22		

✻ If a communications error occurs between MFB2 Board and Master Board during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between MFB2 Board and Master Board for proper connection and, if it is intact, replace the board.

<Resetting the Display>

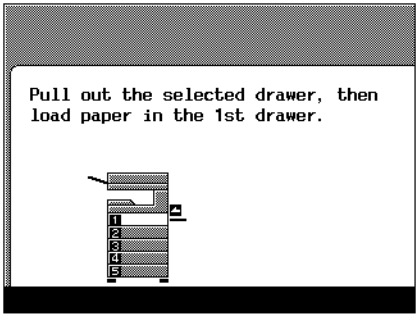
Misfeed in the copier	Misfeed in the option
Open the relevant door, remove all sheets of paper misfed and left inside, and then open and close the Side Cover.	Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option.

✻ If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

3-2. Size Error

- The following warning screen appears if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

1st to 5th Drawer



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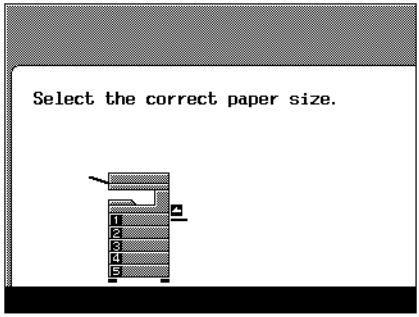
Manual Bypass



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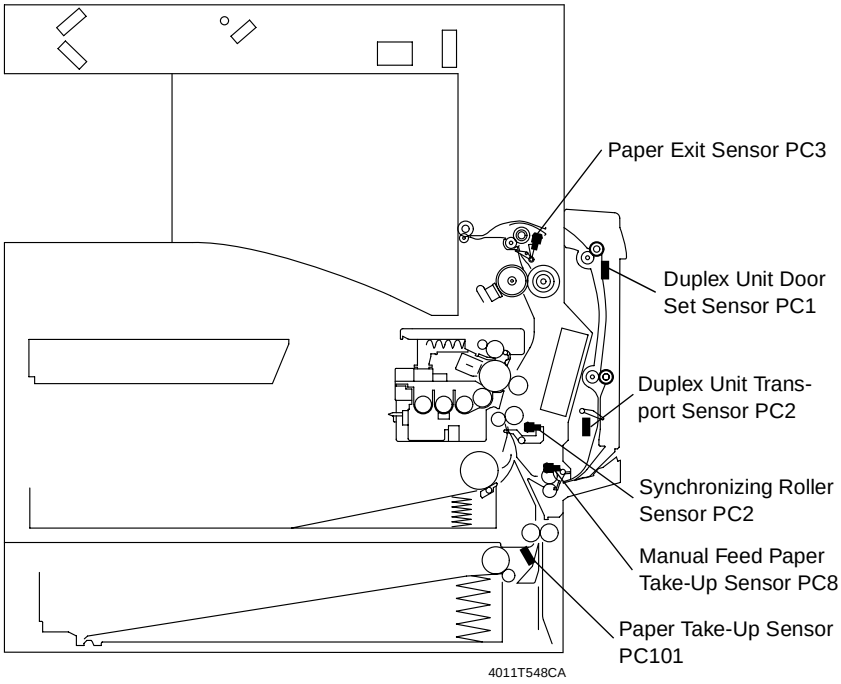
✻ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display.

<Resetting the Size Error Display>
- Press the Panel Reset key.
- Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

3-3. Misfeed Detection Sensor Layout


Paper Exit Sensor PC3
Duplex Unit Door Set Sensor PC1
Duplex Unit Transport Sensor PC2
Synchronizing Roller Sensor PC2
Manual Feed Paper Take-Up Sensor PC8
Paper Take-Up Sensor PC101
4011T548CA

✻ The Duplex Unit is standard on the 35-cpm copier.
✻ A fixed paper size cassette is standard for the 2nd Drawer of the 25-cpm and 35-cpm copier.

3-4. Types of Misfeed Detection and Detection Timings

- The following lists the types of misfeed detection and detection timings for different misfeed locations.
- The symbol “L” (for the leading edge) and “T” (for the trailing edge) given in ( ) indicate the particular edge of the paper detected by the sensor.

NOTE

For the types of misfeed detection and detection timings of options, see the relevant option service manual.

1st Drawer Take-Up Misfeed

Type	Detection Start	Detection
Paper take-up failure detection	1st Drawer Paper Take-Up Solenoid energized	Synchronizing Roller Sensor (L)

Manual Bypass Take-Up Misfeed

Type	Detection Start	Detection
Bypass paper take-up failure detection	Manual Feed Paper Take-Up Clutch energized	Synchronizing Roller Sensor (L)
Paper left	Power Switch ON / Misfeed reset	Manual Feed Paper Take-Up Sensor activated

2nd Drawer Take-Up/Transport Misfeed

Type	Detection Start	Detection
Paper take-up failure detection	Paper Take-Up Clutch energized	Synchronizing Roller Sensor (L)
Paper left	Power Switch ON / Misfeed reset	Paper Take-Up Sensor activated

Separator Misfeed

Type	Detection Start	Detection
Leading edge detection by Paper Exit Sensor	Synchronizing Roller Sensor (L)	Paper Exit Sensor (L)
Trailing edge detection by Synchronizing Roller Sensor / size error misfeed detection	Synchronizing Roller Sensor (L)	Synchronizing Roller Sensor (T)
Paper left	Power Switch ON / Misfeed reset	Synchronizing Roller Sensor activated

Fusing/Exit Misfeed

Type	Detection Start	Detection
Trailing edge detection by Paper Exit Sensor	Synchronizing Roller Sensor (T)	Paper Exit Sensor (T)
Paper left	Power Switch ON / Misfeed reset	Paper Exit Sensor activated

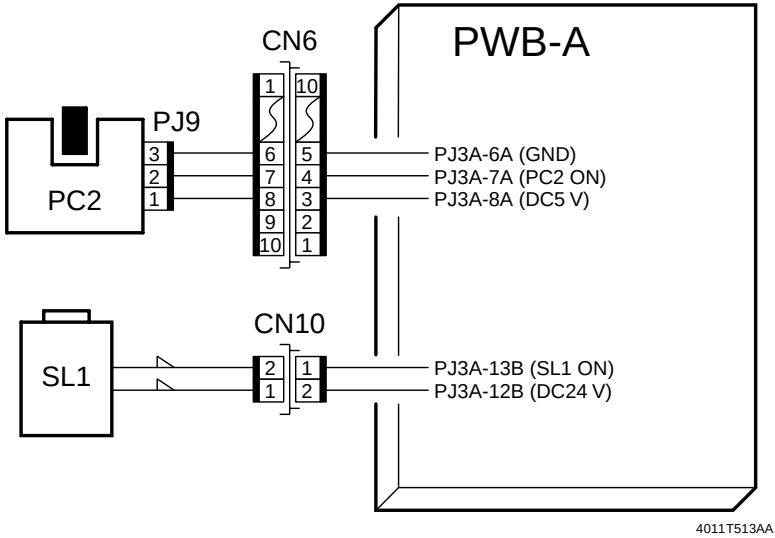
Duplex Turnover/Take-Up Misfeed

Type	Detection Start	Detection
Leading edge detection by Duplex Unit Transport Sensor	Paper Exit Sensor (T)	Duplex Unit Transport Sensor (L)
Paper take-up failure detection	Duplex Unit Transport Sensor (L)	Synchronizing Roller Sensor (L)
Paper left	Power Switch ON / Misfeed reset	Duplex Unit Transport Sensor activated

3-5. Misfeed Troubleshooting Procedures

(1) 1st Drawer Take-Up Misfeed

Relevant Electrical Parts	
1st Drawer Paper Take-Up Solenoid SL1 Synchronizing Roller Sensor PC2	Master Board PWB-A



1st Drawer Take-Up Misfeed Troubleshooting Procedures

- Paper is not taken up at all.

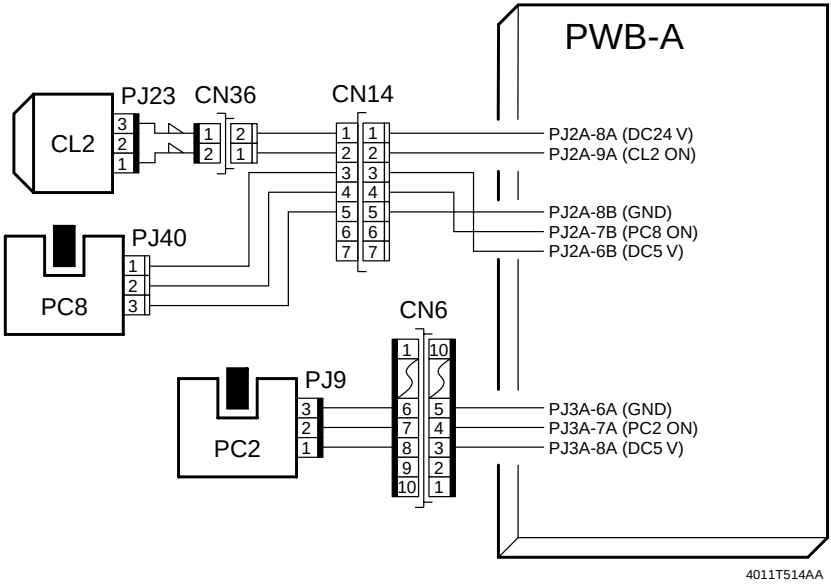
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Edge Guide and Trailing Edge Stop are at correct position to accommodate paper.	NO	Set as necessary.
4	Paper Take-Up Roll is dirty, deformed, or worn.	YES	Clean or change.
5	Mylar is dirty or deformed.	YES	Clean or change.
6	Paper Lifting Plate is dirty or deformed.	YES	Clean or change.
7	Separator Pad is dirty, deformed, or worn.	YES	Clean or change.
8	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
9	1st Drawer Paper Take-Up Solenoid operation check: the voltage across CN10-1 on the side of Master Board and GND changes from DC24 V to DC0 V when the Start key is pressed.	YES	Change solenoid.
		NO	Change Master Board.

- Paper is at a stop near the Synchronizing Roller.

Step	Check	Result	Action
1	Pre-Image Transfer Guide Plate is dirty or deformed.	YES	Clean or change.
2	Synchronizing Roller Sensor operation check through I/O check	YES	Change Master Board.
		NO	Check actuator. Change Synchronizing Roller Sensor.

(2) Manual Bypass Take-Up Misfeed

Relevant Electrical Parts	
Manual Feed Paper Take-Up Clutch CL2 Synchronizing Roller Sensor PC2	Manual Feed Paper Take-Up Sensor PC8 Master Board PWB-A



Manual Bypass Take-Up Misfeed Troubleshooting Procedures

- Paper is not taken up at all.

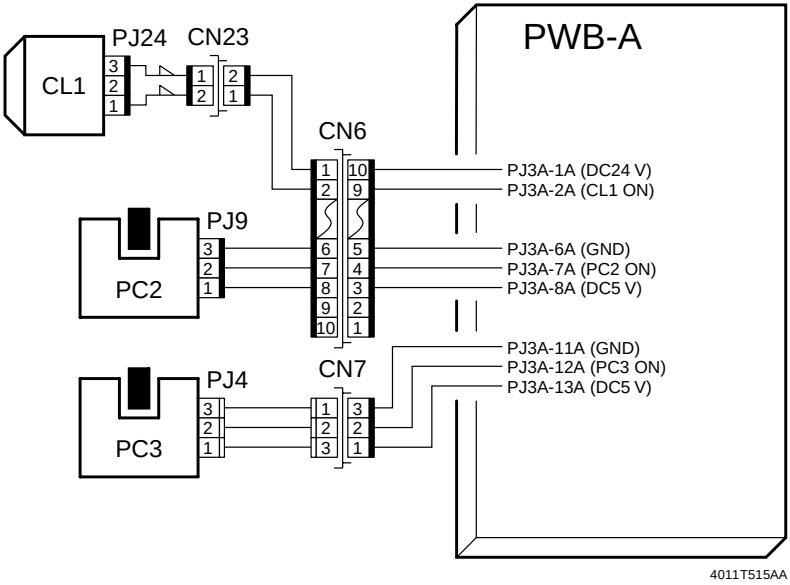
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Edge Guides are at the correct position along the edges of the paper.	NO	Set as necessary.
4	Manual Feed Paper Take-Up Rolls are dirty, deformed, or worn.	YES	Clean or change.
5	Manual Feed Paper Take-Up Sensor operation check through I/O check	NO	Check actuator. Change Manual Feed Paper Take-Up Sensor.
6	Manual Feed Paper Take-Up Clutch operation check: the voltage across CN14-2 on the side of Master Board and GND changes from DC24 V to DC0 V when the Side Cover is opened and closed.	YES	Change Manual Feed Paper Take-Up Clutch.
		NO	Change Master Board.

- Paper is at a stop near the Synchronizing Roller.

Step	Check	Result	Action
1	Pre-Image Transfer Guide Plate is dirty or deformed.	YES	Clean or change.
2	Synchronizing Roller Sensor operation check through I/O check	YES	Change Master Board.
		NO	Check actuator. Change Synchronizing Roller Sensor.

(3) Separator/Fusing/Exit Misfeed

Relevant Electrical Parts	
Paper Exit Sensor PC3 Synchronizing Roller Sensor PC2	Synchronizing Clutch CL1 Master Board PWB-A



Separator/Fusing/Exit Misfeed Troubleshooting Procedures

• Paper is at a stop near the Synchronizing Roller.

Step	Check	Result	Action
1	Pre-Image Transfer Guide Plate is dirty or deformed.	YES	Clean or change.
2	Synchronizing Rollers are dirty, deformed, or worn.	YES	Clean or change.
3	The misfeed is eliminated after the paper loop length has been adjusted.	YES	This completes the procedure.
4	Synchronizing Roller Sensor operation check through I/O check	NO	Check actuator. Change Synchronizing Roller Sensor.
5	Synchronizing Clutch operation check: the voltage across CN6-9 on the side of Master Board and GND changes from DC24 V to DC0 V when the Start key is pressed.	YES	Change Synchronizing Clutch.
		NO	Change Master Board.

• Paper is at a stop near the PC Drum.

Step	Check	Result	Action
1	Image Transfer Roller is dirty or deformed.	YES	Clean or change.
2	Charge Neutralizing Plate is dirty or deformed.	YES	Clean or change.
3	PC Drum Paper Separator Fingers are dirty or deformed.	YES	Clean or change.

• Paper is at a stop at the fusing section.

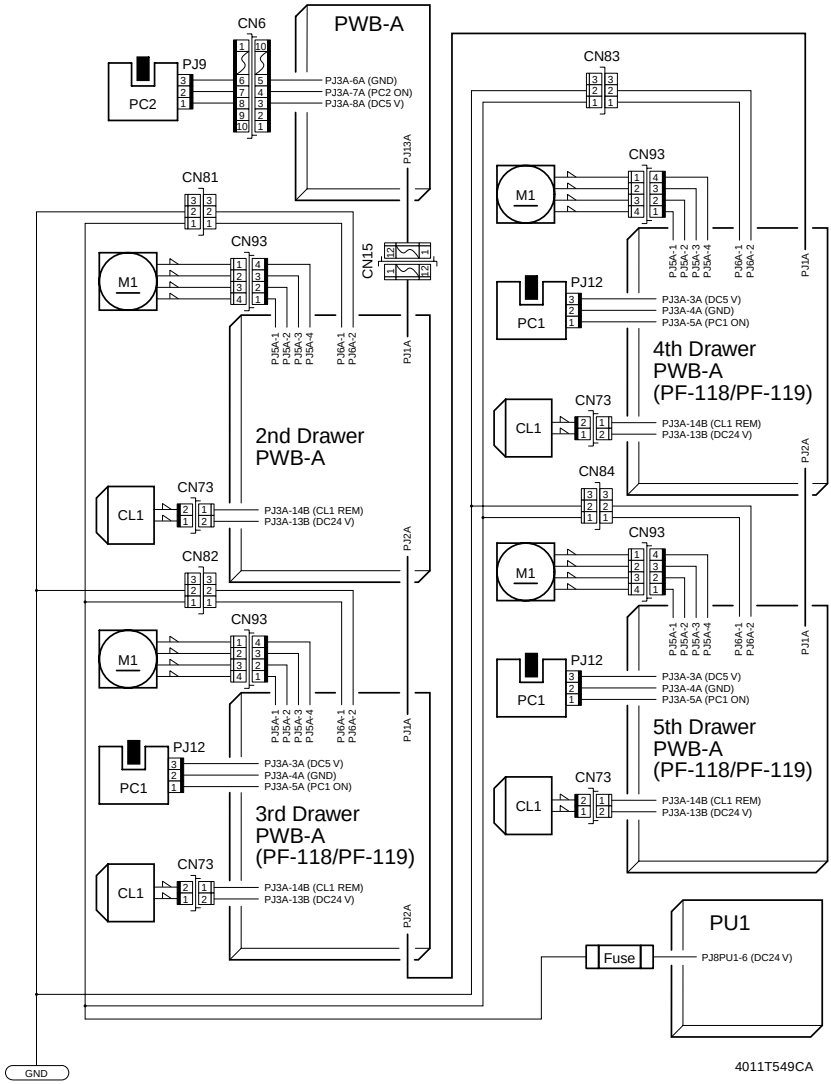
Step	Check	Result	Action
1	Fusing Guide Plate is dirty or deformed.	YES	Clean or change.
2	Fusing Rollers are dirty, deformed, or worn.	YES	Clean or change.
3	Fusing Separator Fingers are dirty or deformed.	YES	Clean or change.

• Paper is at a stop at the exit section.

Step	Check	Result	Action
1	Paper Exit Roller is dirty, deformed, or worn.	YES	Clean or change.
2	Paper Exit Sensor operation check through I/O check	YES	Change Master Board.
		NO	Check actuator. Change Paper Exit Sensor.

(4) Paper Take-Up/Transport Misfeed (2nd Fixed Paper Size Cassette/PF-118/PF-119)

Relevant Electrical Parts	
Paper Take-Up Clutch CL1 Paper Take-Up Sensor PC1 Synchronizing Roller Sensor PC2 I/C Motor M1	Power Supply Unit PU1 Control Board PWB-A Master Board PWB-A



✻ A fixed paper size cassette is standard for the 2nd Drawer of the 25-cpm and 35-cpm copier.

Paper Take-Up/Transport Misfeed (2nd Fixed Paper Size Cassette/PF-118/PF-119) Troubleshooting Procedures

- Paper is not taken up at all.

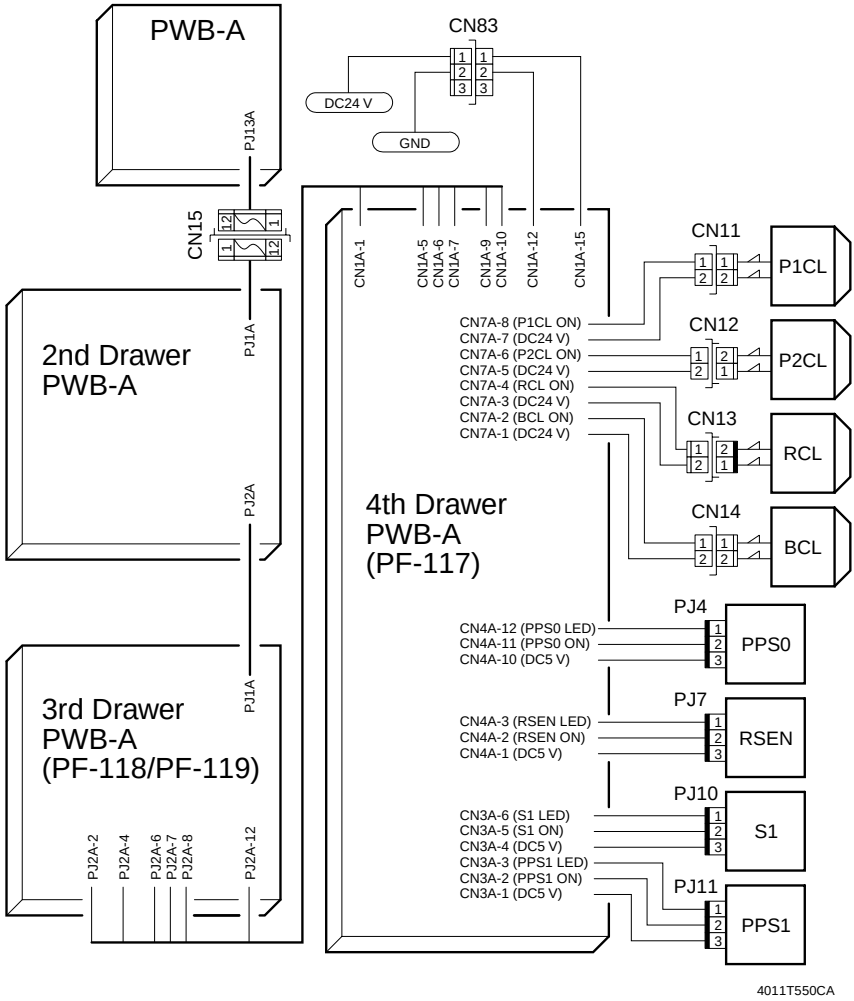
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Edge Guide and Trailing Edge Stop are at correct position to accommodate paper.	NO	Set as necessary.
4	Paper Take-Up Roll is dirty, deformed, or worn.	YES	Clean or change.
5	Mylar is dirty or deformed.	YES	Clean or change.
6	Paper Lifting Plate is dirty or deformed.	YES	Clean or change.
7	Paper Separator Roll is dirty, deformed, or worn.	YES	Clean or change.
8	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
9	The voltage across PJ6A-1 on Control Board and GND is DC24 V.	YES	Check step 11 and onward.
10	Fuse is conducting.	YES	Change Power Supply Unit.
		NO	Change fuse.
11	Paper Take-Up Motor drive check: Vertical Transport Roller turn when the Power Switch is turned ON.	NO	Change Paper Take-Up Motor. Change Control Board. Change Master Board.
12	Paper Take-Up Clutch operation check: the voltage across PJ3A-14B on Control Board and GND changes from DC24 V to DC0 V when the Start key is pressed.	YES	Change Paper Take-Up Clutch.
		NO	Change Control Board. Change Master Board.

• Paper is at a stop at the vertical transport section or near the Synchronizing Roller.

Step	Check	Result	Action
1	Vertical Transport Roller is dirty, deformed, or worn.	YES	Clean or change.
2	Vertical transport guide plate is dirty or deformed.	YES	Clean or change.
3	Paper Take-Up Sensor operation check: I/O check of all Paper Take-Up Sensors	YES	Check step 5.
4	Paper Take-Up Sensor operation check: the voltage across PJ3A-5A on Control Board and GND is DC5 V when the sensor is blocked and DC0 V when the sensor is unblocked.	YES	Change Control Board. Change Master Board.
		NO	Check actuator. Change Paper Take-Up Sensor.
5	Synchronizing Roller Sensor operation check through I/O check	YES	Change Master Board.
		NO	Correct actuator. Change Synchronizing Roller Sensor.

(5) Paper Take-Up Misfeed (PF-117)

Relevant Electrical Parts	
LCC Paper Take-Up Sensor PPS0	Separator Clutch BCL
Paper Empty Sensor 1 PPS1	Registration Clutch RCL
Paper Standby Position Sensor S1	LCC Control Board PWB-A
Registration Sensor RSEN	Control Board PWB-A
Paper Take-Up Clutch 1 P1CL	Master Board PWB-A
Paper Take-Up Clutch 2 P2CL	



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Paper Take-Up Misfeed (PF-117) Troubleshooting Procedures

- Misfeed is detected when the cassette is slid in.

Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Paper Take-Up Roll is dirty, deformed, or worn.	YES	Clean or change.
4	Mylar is dirty or deformed.	YES	Clean or change.
5	Lift 1/Lift 2 is dirty, deformed, or scratchy.	YES	Clean or change.
6	Paper Empty Sensor 1 operation check through I/O check	NO	Change Paper Empty Sensor 1. Change LCC Control Board. Change Control Board.
7	LCC Paper Take-Up Sensor operation check through I/O check	NO	Change LCC Paper Take-Up Sensor. Change LCC Control Board. Change Control Board.
8	Paper Standby Position Sensor operation check through I/O check	NO	Change Paper Standby Position Sensor. Change LCC Control Board. Change Control Board.
9	Paper transport operation check: paper is transported up to Paper Standby Position Sensor when the cassette is slid in with paper loaded only in Lift 2.	YES	Change LCC Control Board. Change Control Board. Change Master Board.
10	Paper Take-Up Clutch 1 operation check: the voltage across CN7A-8 on LCC Control Board and GND changes from DC24 V to DC0 V when the cassette is slid in with paper loaded only in Lift 2.	NO	Change LCC Control Board. Change Control Board. Change Master Board.
11	Paper Take-Up Clutch 2 operation check: the voltage across CN7A-6 on LCC Control Board and GND changes from DC24 V to DC0 V when the cassette is slid in with paper loaded only in Lift 2.	NO	Change LCC Control Board. Change Control Board. Change Master Board.
12	Paper transport operation check: a misfeed is detected when the cassette is slid in with paper loaded only in Lift 1.	YES	Change Paper Take-Up Clutch 1.
		NO	Change Paper Take-Up Clutch 2.

• Paper is not taken up at all.

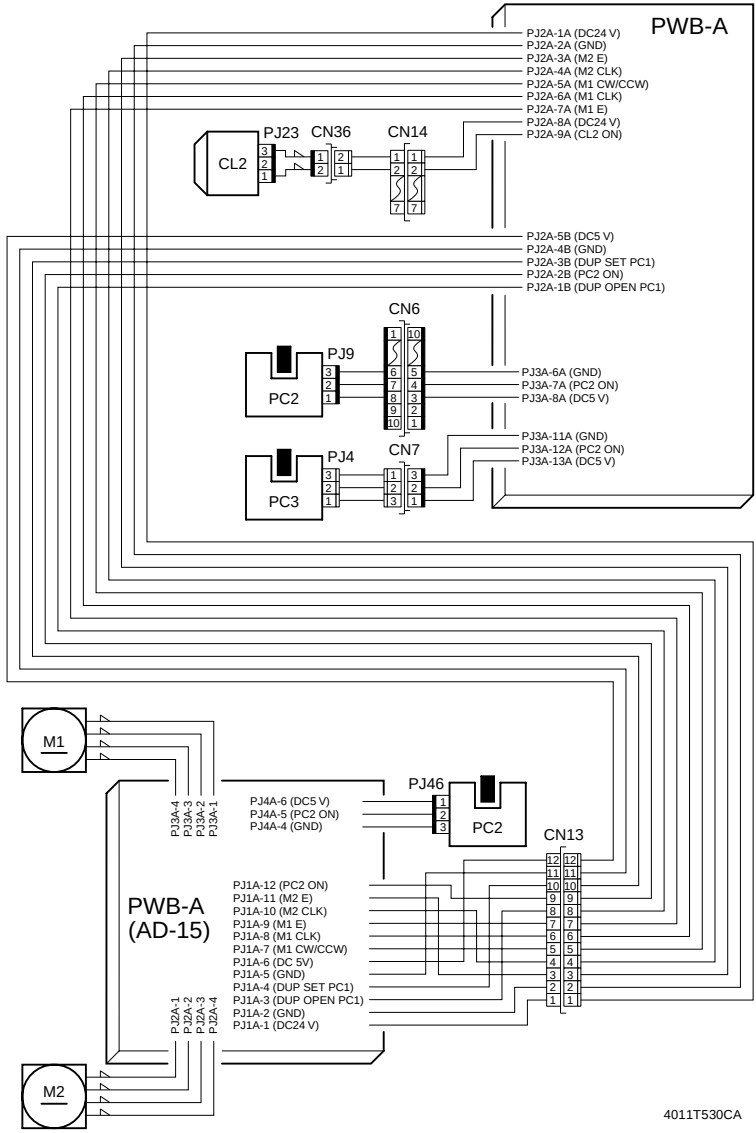
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Feed Roll and Separator Roll are dirty, deformed, or worn.	YES	Clean or change.
4	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
5	Separator Clutch operation check: the voltage across CN7A-2 on LCC Control Board and GND changes from DC24 V to DC0 V when the Start key is pressed.	YES	Change Separator Clutch.
		NO	Change LCC Control Board. Change Control Board. Change Master Board.

• Paper is at a stop near the Vertical Transport Roller.

Step	Check	Result	Action
1	Vertical Transport Roller/Roll is dirty, deformed, or worn.	YES	Clean or change.
2	Registration Sensor operation check through I/O check	NO	Change Registration Sensor. Change LCC Control Board. Change Control Board.
3	Registration Clutch operation check: the voltage across CN7A-4 on LCC Control Board and GND changes from DC24 V to DC0 V when the Start key is pressed.	YES	Change Registration Clutch.
		NO	Change LCC Control Board. Change Control Board. Change Master Board.

(6) Duplex Turnover/Take-Up Misfeed (AD-15)

Relevant Electrical Parts	
Paper Exit Sensor PC3	Duplex Unit Turnover Motor M1
Synchronizing Roller Sensor PC2	Duplex Unit Transport Motor M2
Manual Feed Paper Take-Up Clutch CL2	Duplex Unit Control Board PWB-A
Duplex Unit Transport Sensor PC2	Master Board PWB-A



✻ The Duplex Unit is standard on the 35-cpm copier.

Duplex Turnover/Take-Up Misfeed (AD-15) Troubleshooting Procedures

- Paper is at a stop near the exit section.

Step	Check	Result	Action
1	Paper Exit Roller is dirty, deformed, or worn.	YES	Clean or change.
2	Duplex Unit Transport Roller/Roll 1 is dirty, deformed, or worn.	YES	Clean or change.
3	Paper Exit Sensor operation check through I/O check	NO	Check actuator. Change Paper Exit Sensor.
4	Duplex Unit Turnover Motor operation check: Duplex Unit Turnover Motor turns during a 2-sided copy run.	YES	Check step 6 and onward.
5	Duplex Unit Turnover Motor operation check: the voltage across PJ1A-9 on Duplex Unit Control Board and GND changes from DC5 V to DC0 V during a 2-sided copy run.	YES	Change Duplex Unit Turnover Motor. Change Duplex Unit Control Board.
		NO	Change Master Board.
6	Duplex Unit Turnover Motor operation check: the direction of rotation of Duplex Unit Turnover Motor changes from forward to backward during a 2-sided copy run.	YES	Check step 8 and onward.
7	Duplex Unit Turnover Motor operation check: the voltage across PJ1A-7 on Duplex Unit Control Board and GND changes from DC5 V to DC0 V during a 2-sided copy run.	YES	Change Duplex Unit Turnover Motor. Change Duplex Unit Control Board.
		NO	Change Master Board.
8	Duplex Unit Transport Motor operation check: Duplex Unit Transport Motor turns during a 2-sided copy run.	YES	Change Master Board.
9	Duplex Unit Transport Motor operation check: the voltage across PJ1A-11 on Duplex Unit Control Board and GND changes from DC5 V to DC0 V during a 2-sided copy run.	YES	Change Duplex Unit Transport Motor. Change Duplex Unit Control Board.
		NO	Change Master Board.

• Paper is at a stop inside the Duplex unit.

Step	Check	Result	Action
1	Duplex Unit Transport Roller/Roll 2 is dirty, deformed, or worn.	YES	Clean or change.
2	Manual Feed Paper Take-Up Roll is dirty, deformed, or worn.	YES	Clean or change.
3	Duplex Unit Transport Sensor operation check through I/O check	YES	Check step 6.
4	Duplex Unit Transport Sensor operation check: the voltage across PJ4A-5 on Duplex Unit Control Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	NO	Change Duplex Unit Transport Sensor.
5	Duplex Unit Transport Sensor operation check: the voltage across PJ1A-12 on Duplex Unit Control Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	YES	Change Master Board.
		NO	Change Duplex Unit Control Board.
6	Manual Feed Paper Take-Up Clutch operation check: the voltage across CN14-2 on the side of Master Board and GND changes from DC24 V to DC0 V when paper leaves the Duplex Unit for the second copy cycle.	YES	Change Manual Feed Paper Take-Up Clutch.
		NO	Change Master Board.

• Paper is at a stop near the Synchronizing Roller.

Step	Check	Result	Action
1	Pre-Image Transfer Guide Plate is dirty or deformed.	YES	Clean or change.
2	Synchronizing Roller Sensor operation check through I/O check	YES	Change Master Board.
		NO	Check actuator. Change Synchronizing Roller Sensor.

4. MALFUNCTION

The copier's CPU is equipped with a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code on the Touch Panel.

Malfunction Resetting Procedure

- *For all malfunctions except fusing-related ones, turn OFF, then ON the Power Switch or open and close the Side Cover.*
- *Use "Trouble Reset" of the "Initial" mode to reset all malfunctions including fusing-related ones.*

4-1. Detection Timing by Malfunction Code

Code	Description	Detection Timing
C0000	Main Motor malfunction	The Lock signal remains HIGH for a continuous 1-sec. period while the Main Motor remains energized.
C0010	I/C Motor malfunction	The Lock signal remains HIGH for a continuous 1-sec. period while the I/C Motor remains energized.
C0045	Cooling Fan Motor malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while the Cooling Fan Motor remains energized.
C004C	Ozone Fan Motor malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while the Ozone Fan Motor remains energized.
C004E	Power Unit Cooling Fan Motor malfunction	The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while the Power Unit Cooling Fan Motor remains energized.
C0070	Main Hopper Toner Replenishing Motor malfunction	• The Toner Bottle Home Position Sensor remains blocked (L) for a continuous 2-sec. period or more while the Main Hopper Toner Replenishing Motor remains energized. • The Toner Bottle Home Position Sensor remains unblocked (H) for a continuous 6-sec. period or more while the Main Hopper Toner Replenishing Motor remains energized.
C0214	Abnormal image transfer voltage	The image transfer voltage remains more than 100 V for a continuous 0.1-sec. period or more while the PC Drum remains stationary (except while an F2 operation is being run).
C0500	Warming-up failure	The temperature of the Fusing Rollers does not reach the required level even after the lapse of a given period of time during a warm-up cycle. • From room temperature to 100 °C: Within 65 sec. • From 100 °C to 140 °C: Within 30 sec. • From 140 °C to 170 °C: Within 20 sec. • From 170 °C to the completion of warming-up: Within 22 sec.

Code	Description	Detection Timing
C0510	Abnormally low fusing temperature	• The fusing temperature remains 105 °C or less for a continuous 0.1-sec. period or more during the standby state or printing. • The fusing temperature remains a level lower than the following temperature for a continuous 2-min. period or more during the low-temperature standby state. 35-cpm copier: 105 °C 25-cpm copier: 80 °C 20-cpm copier (U.S.A. and Canada only): 80 °C
C0520	Abnormally high fusing temperature	The fusing temperature remains 230 °C or more for a continuous 0.1-sec. period or more.
C0650	Faulty Scanner Home Position Sensor 1	<The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position> • The Scanner Home Position Sensor 1 is not unblocked (H) even when the Scanner moves 10 mm to the left. • The Scanner Home Position Sensor 1 is not blocked (L) even when the Scanner moves 4 mm to the right after the Scanner Home Position Sensor 1 has been unblocked (H). <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home> • The Scanner Home Position Sensor 1 is not blocked (L) even when the Scanner moves 469.5 mm to the right.
C0651	Faulty Scanner Home Position Sensor 2	When the Start key is pressed with a document loaded in the Document Feed Tray of the ADF, Scanner Home Position Sensor 2 is not blocked (L) even when the Scanner moves 463 mm to the left after the sensor has been unblocked (H).
C0990	LCC Lift-Up Motor failure to turn	See the relevant option service manual.
C0991	Lift 1 ascent motion failure	
C0995	LCC Transport Motor failure to turn	
C0999	Lift 2 ascent motion failure	
C099D	LCC communication error	
C0B00	Transport Motor drive malfunction	
C0B20	Stapling Unit Moving Motor drive malfunction	
C0B30	CD Aligning Motor drive malfunction	

Code	Description	Detection Timing
C0B38	Shift Motor drive malfunction	See the relevant option service manual.
C0B48	Exit Roller/Rolls Spacing Motor drive malfunction	
C0B4A	Storage Roller/Rolls Spacing Motor drive malfunction	
C0B4D	Paper Holding Tray Motor drive malfunction	
C0B4E	Finisher Tray Motor drive malfunction	
C0B50	Stapling Motor 1 drive malfunction / Stapling Motor drive malfunction	
C0B54	Stapling Motor 2 drive malfunction	
C0B73	Punch Motor drive malfunction	
C0B78	Hole Position Selector Motor drive malfunction (U.S.A. and Canada)	
C0B80	Shift Motor drive malfunction	
C0BA0	Elevator Motor drive malfunction	
C0F32	Faulty ATDC Sensor	The value of data read by the ATDC Sensor is faulty. (ATDC Sensor reading is 19 % or more, or 7 % or less.)
C0F33	ATDC adjustment failure	• In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after the ATDC Sensor sampling. • In an F8 operation, the control voltage falls outside the range of 5.39 V to 8.15 V.
C1038	Engine connection error	• The system fails in checking initial engine connection when the Power Switch is turned ON. • The system succeeded in checking initial connection when the Power Switch was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation.

Code	Description	Detection Timing
C1300	Polygon Motor malfunction	<Faulty start detection> • The Lock signal is not detected at any time during a given period of time 1 sec. after the Polygon Motor has been energized. <Faulty Lock signal detection> • No Lock signals are detected at any time during the 1-sec. period which starts 1 sec. after the first Lock. <Out-of-timing Lock detection> • The Lock signal is not detected for a continuous 0.5-sec. period while the Polygon Motor is in the stabilized turning state. <Abnormal Lock detection> • The Lock signal remains ON for a continuous 5-sec. period while the Polygon Motor remains deenergized.
C133A	Communications error (G/A)	Communications with the gate array for expansion I/O (the IC mounted on the Master Board) fail.
C133B	Communications error (option I/F)	The connection status of a finishing option is changed after the power has been turned ON.
C13C0	I/C initialization failure	After failing to blow the imaging cartridge fuse two consecutive times, the I/C is determined to be new.
C13D0	Faulty EEPROM	EEPROM, in which no initial data is written, is found.
C13F0	HSYNC detection failure	• The SOS falling edge is not detected for 0.2 sec. or more after the Polygon Motor has been energized and laser output started. • No SOS falling edges are detected while VIA remains ON.

✻ For the printer controller malfunctions of “C18XX,” see Pi3502 service manual.

4-2. Troubleshooting Procedures by Malfunction Code

(1) C0000: Main Motor malfunction

C0010: I/C Motor malfunction

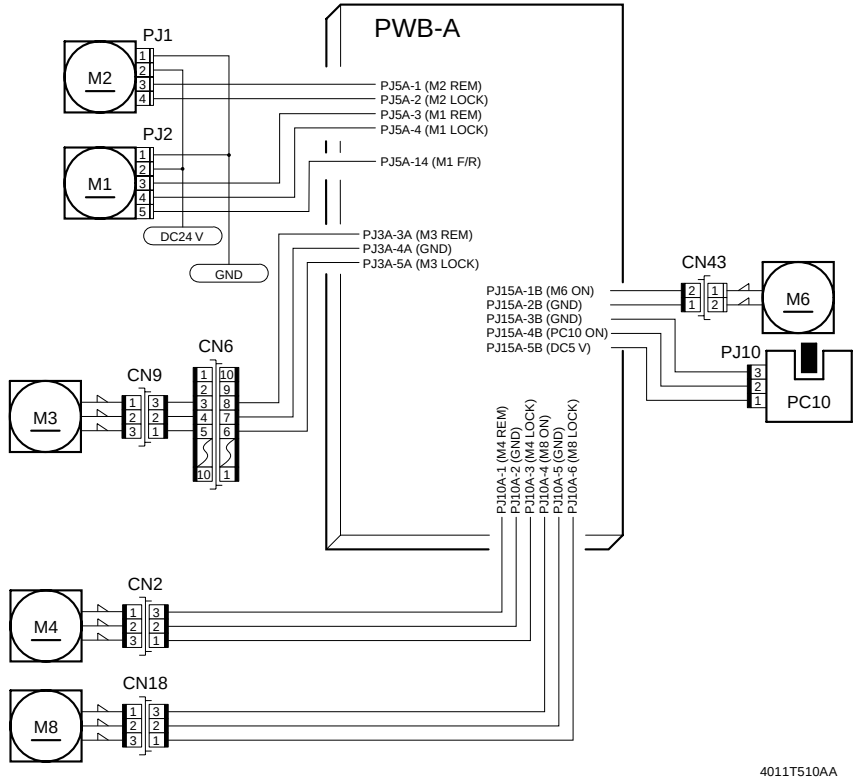
C0045: Cooling Fan Motor malfunction

C004C: Ozone Fan Motor malfunction

C004E: Power Unit Cooling Fan Motor malfunction

C0070: Main Hopper Toner Replenishing Motor malfunction

Relevant Electrical Parts	
Main Motor M2	Power Unit Cooling Fan Motor M4
I/C Motor M1	Main Hopper Toner Replenishing Motor M6
Cooling Fan Motor M3	Toner Bottle Home Position Sensor PC10
Ozone Fan Motor M8	Master Board PWB-A



C0000

Step	Check	Result	Action
1	Main Motor operation check: the voltage across PJ1-3 of the Main Motor and GND changes from DC5 V to DC0 V when the Side Cover is opened and closed.	YES	Check various parts for possible overload. Change Main Motor.
		NO	Change Master Board.

C0010

Step	Check	Result	Action
1	I/C Motor operation check: the voltage across PJ2-3 of the I/C Motor and GND changes from DC5 V to DC0 V when the Side Cover is opened and closed.	YES	Check various parts for possible overload. Change I/C Motor.
		NO	Change Master Board.

C0045

Step	Check	Result	Action
1	Cooling Fan Motor operation check: the voltage across CN6-8 on the side of Master Board and GND changes from DC0 V to DC24 V when the Power Switch is turned ON.	YES	Change Cooling Fan Motor.
		NO	Change Master Board.

C004C

Step	Check	Result	Action
1	Ozone Fan Motor operation check: the voltage across CN18-3 on the side of Master Board and GND changes from DC0 V to DC24 V when the Power Switch is turned ON.	YES	Change Ozone Fan Motor.
		NO	Change Master Board.

C004E

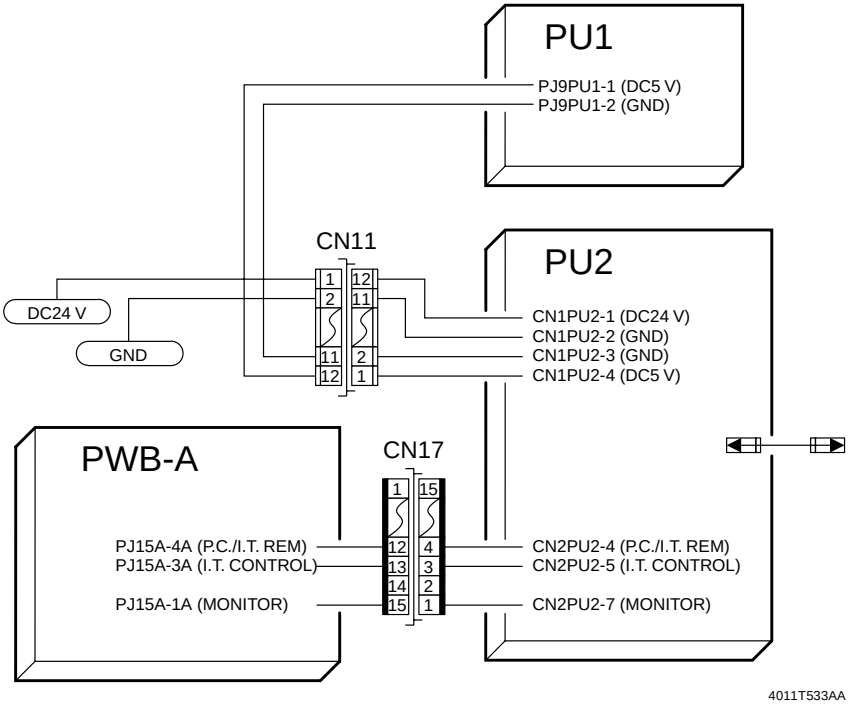
Step	Check	Result	Action
1	Power Unit Cooling Fan Motor operation check: the voltage across CN2-3 on the side of Master Board and GND changes from DC0 V to DC24 V when the Power Switch is turned ON.	YES	Change Power Unit Cooling Fan Motor.
		NO	Change Master Board.

C0070

Step	Check	Result	Action
1	Main Hopper Toner Replenishing Motor operation check: • Remove the Lower Rear Cover. • Unlock the Toner Bottle Lock Lever. • Block the Toner Bottle Cover Sensor. • Turn the Toner Bottle a half turn by hand. The Toner Bottle turns when the Toner Bottle Cover Sensor is unblocked under the above conditions.	YES	Check step 3.
2	Main Hopper Toner Replenishing Motor operation check: the voltage across CN43-2 on the side of Master Board and GND changes from DC0 V to DC24 V when step 1 is performed.	YES	Change Main Hopper Toner Replenishing Motor.
		NO	Change Master Board.
3	Toner Bottle Home Position Sensor operation check through I/O check	YES	Change Master Board.
		NO	Change Toner Bottle Home Position Sensor.

(2) C0214: Abnormal image transfer voltage

Relevant Electrical Parts	
Power Supply Unit PU1 High Voltage Unit PU2	Master Board PWB-A



C0214

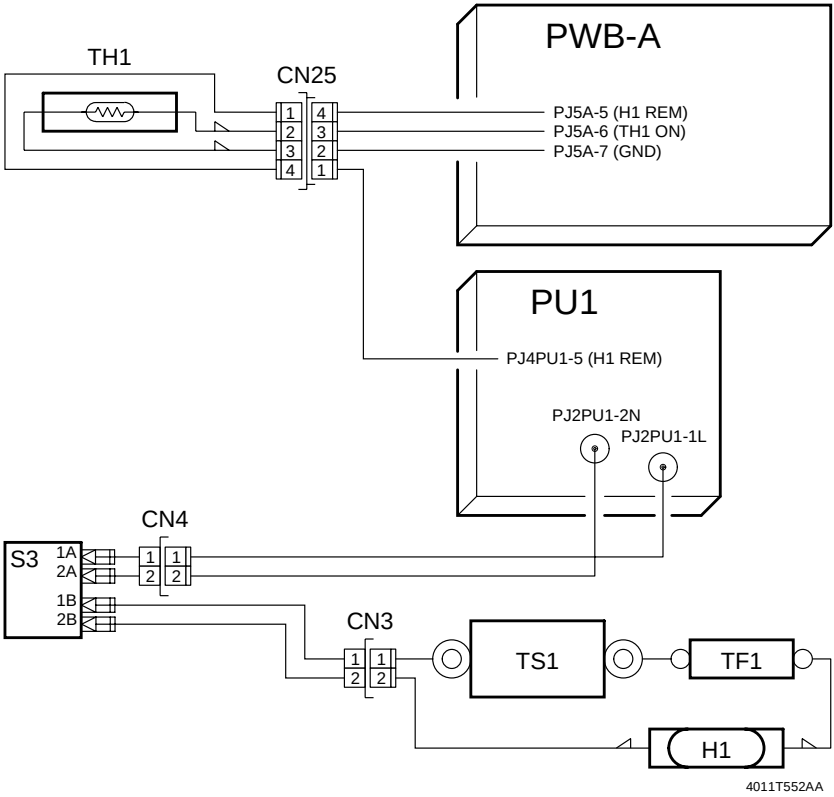
Step	Check	Result	Action
1	The voltage across CN11-1 on the side of Power Supply Unit and GND is DC24 V. The voltage across CN11-2 on the side of Power Supply Unit and GND is DC5 V.	NO	Change Power Supply Unit.
2	The voltage across CN17-12 on the side of Master Board and GND remains DC1.2 V or less while the malfunction code is being displayed.	YES	Change Master Board.
3	The voltage across CN17-15 on the side of Master Board and GND remains DC0.9 V or more while the malfunction code is being displayed.	YES	Change Master Board.
		NO	Change High Voltage Unit.

(3) C0500: Warming-up failure

C0510: Abnormally low fusing temperature

C0520: Abnormally high fusing temperature

Relevant Electrical Parts	
Fusing Roller Heater Lamp H1	Side Cover Interlock Switch 2 S3
Fusing Roller Thermistor TH1	Power Supply Unit PU1
Fusing Roller Thermostat TS1	Master Board PWB-A
Fusing Roller Heater Lamp Fuse TF1	



C0500,C0510

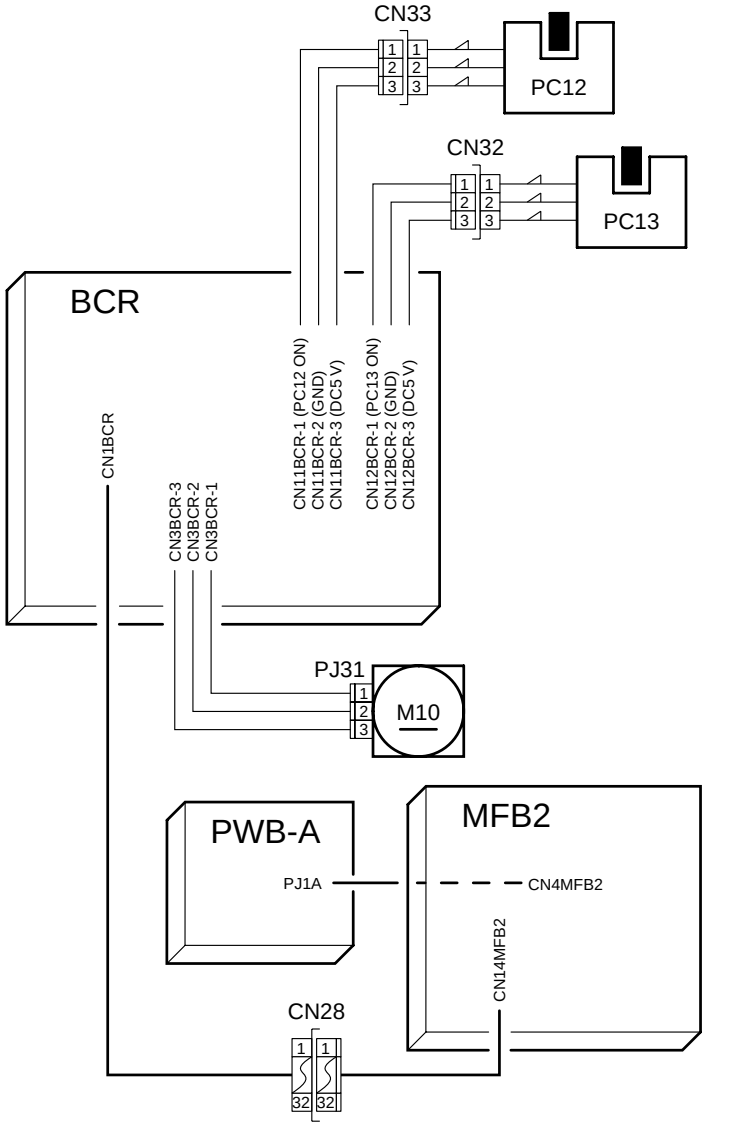
Step	Check	Result	Action
1	Fusing Roller Heater Lamp turns ON when the Side Cover is opened and closed.	NO	Check step 3 and onward.
2	The resistance of Fusing Roller Thermistor (across CN25-2 and 3 on the Fusing Unit end) is infinity.	YES	Change Fusing Roller Thermistor.
		NO	Change Master Board.
3	There is continuity across CN3-1 and 2 on the Fusing Unit end.	YES	Check step 7.
4	Fusing Roller Heater Lamp is conducting.	NO	Change Fusing Roller Heater Lamp.
5	Fusing Roller Thermostat is conducting.	NO	Change Fusing Roller Thermostat.
6	Fusing Roller Heater Lamp Fuse is conducting.	NO	Change Fusing Roller Heater Lamp Fuse.
7	There is continuity across 1A and 1B, and across 2A and 2B, when Side Cover Interlock Switch 2 is actuated.	YES	Change Power Supply Unit. Change Master Board.
		NO	Change Side Cover Interlock Switch 2.

C0520

Step	Check	Result	Action
1	Fusing Roller Thermistor is dirty.	YES	Clean.
2	The circuit across CN25-2 and -3 on the Fusing Unit end is shorted.	YES	Change Fusing Roller Thermistor.
		NO	Change Master Board.

(4) C0650: Faulty Scanner Home Position Sensor 1
C0651: Faulty Scanner Home Position Sensor 2

Relevant Electrical Parts	
Scanner Home Position Sensor 1 PC12	BCR Board BCR
Scanner Home Position Sensor 2 PC13	MFB2 Board MFB2
Scanner Motor M10	Master Board PWB-A

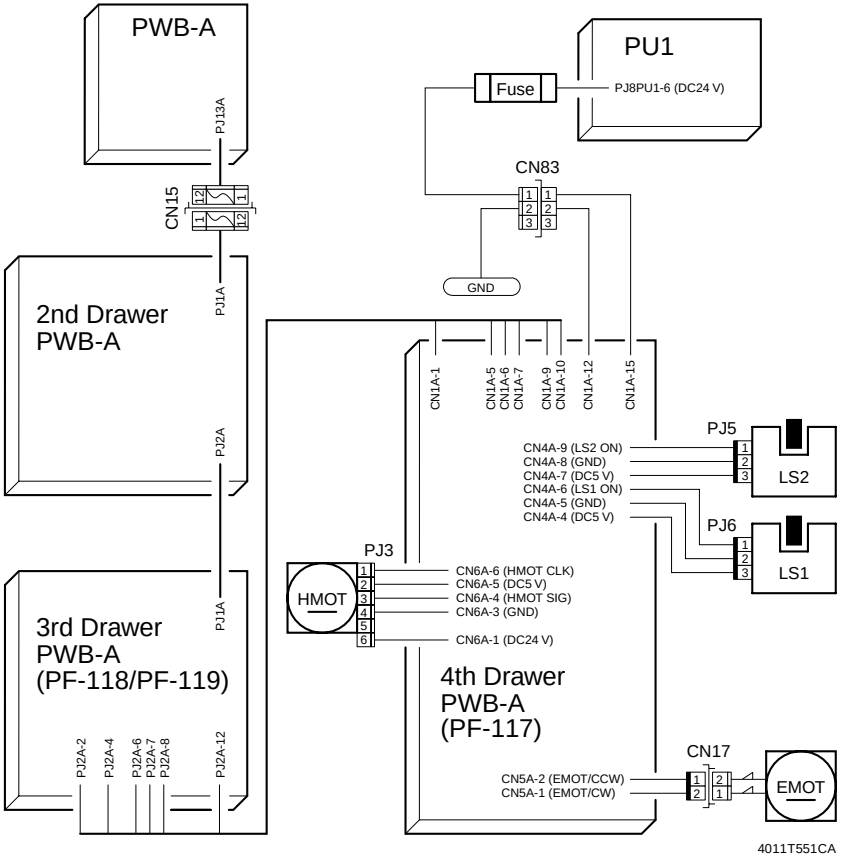


C0650,C0651

Step	Check	Result	Action
1	Scanner Motor operation check: Select functions in the following order: Tech. Rep. Mode → Movement Check → Scanner; set “+1000” in “Relative Position” and touch “Set”; the Scanner moves at this time.	YES	Check step 3 and onward.
2	The Scanner can be moved manually.	YES	Change Scanner Motor. Change BCR Board. Change MFB2 Board. Change Master Board.
		NO	Correct drive coupling.
3	“C0651” is displayed.	YES	Check step 7 and onward.
4	Scanner Home Position Sensor 1 operation check through I/O check	YES	Check to see if Scanner Home Position Sensor 1 is blocked as the Scanner is moved. If it is checked okay, change Master Board.
5	Scanner Home Position Sensor 1 operation check: the voltage across CN11BCR-1 on BCR Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	NO	Change Scanner Home Position Sensor 1.
6	Scanner Home Position Sensor 1 operation check: the voltage across CN1BCR-26 on BCR Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	YES	Change BCR Board.
		NO	Change MFB2 Board. Change Master Board.
7	Scanner Home Position Sensor 2 operation check through I/O check	YES	Check to see if Scanner Home Position Sensor 2 is blocked as the Scanner is moved. If it is checked okay, change Master Board.
8	Scanner Home Position Sensor 2 operation check: the voltage across CN12BCR-1 on BCR Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	NO	Change Scanner Home Position Sensor 2.
9	Scanner Home Position Sensor 2 operation check: the voltage across CN1BCR-27 on BCR Board and GND is DC0 V when the sensor is blocked and DC5 V when the sensor is unblocked.	YES	Change BCR Board.
		NO	Change MFB2 Board. Change Master Board.

(5) C0990: LCC Lift-Up Motor failure to turn
C0991: Lift 1 ascent motion failure
C0995: LCC Transport Motor failure to turn
C0999: Lift 2 ascent motion failure
C099D: LCC communication error

Relevant Electrical Parts	
LCC Lift-Up Motor EMOT	Power Supply Unit PU1
Lift-Up Sensor 1 LS1	LCC Control Board PWB-A
Lift-Up Sensor 2 LS2	Control Board PWB-A
LCC Transport Motor HMOT	Master Board PWB-A



C0990

Step	Check	Result	Action
1	The voltage across CN1A-15 on LCC Control Board and GND is DC24 V.	YES	Change LCC Lift-Up Motor. Change LCC Control Board. Change Control Board. Change Master Board.
2	Fuse is conducting.	YES	Change Power Supply Unit.
		NO	Change fuse.

C0991

Step	Check	Result	Action
1	Lift-Up Sensor 1 operation check through I/O check	YES	Check step 3 and onward.
2	Lift-Up Sensor 1 operation check: the voltage across CN4A-6 on LCC Control Board and GND is DC5 V when the sensor is blocked and DC0 V when the sensor is unblocked.	YES	Change LCC Control Board. Change Control Board. Change Master Board.
		NO	Check actuator. Change Lift-Up Sensor 1.
3	LCC Lift-Up Motor operation check: LCC Lift-Up Motor turns after the cassette has been slid into the copier.	YES	Change Master Board.
4	LCC Lift-Up Motor operation check: the voltage across CN5A-1 on LCC Control Board and GND changes from DC0 V to DC24 V while step 3 is being performed.	YES	Change LCC Lift-Up Motor.
		NO	Change LCC Control Board. Change Control Board. Change Master Board.

C0995

Step	Check	Result	Action
1	The voltage across CN1A-15 on LCC Control Board and GND is DC24 V.	YES	Change LCC Transport Motor. Change LCC Control Board. Change Control Board. Change Master Board.
2	Fuse is conducting.	YES	Change Power Supply Unit.
		NO	Change fuse.

C0999

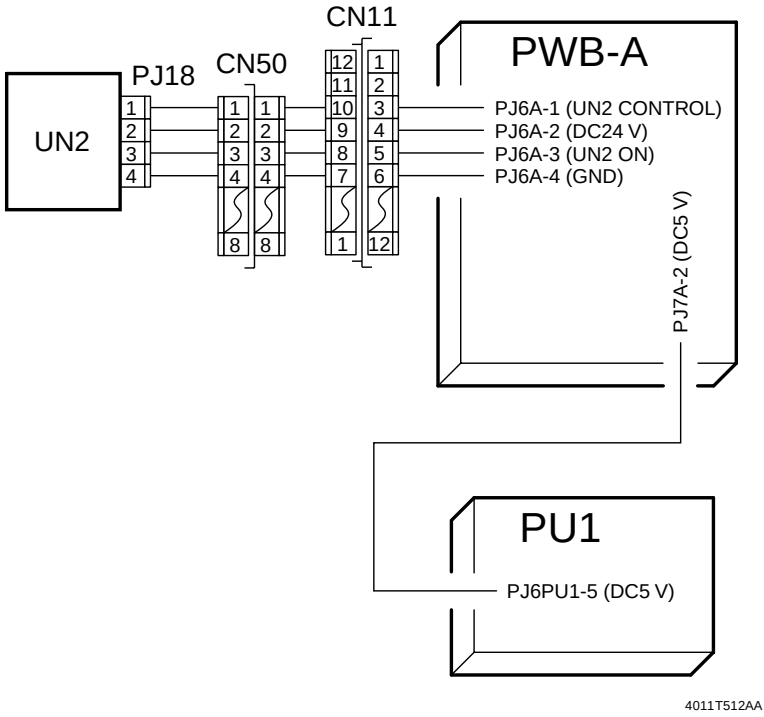
Step	Check	Result	Action
1	Lift-Up Sensor 2 operation check through I/O check	YES	Check step 3 and onward.
2	Lift-Up Sensor 2 operation check: the voltage across CN4A-9 on LCC Control Board and GND is DC5 V when the sensor is blocked and DC0 V when the sensor is unblocked.	YES	Change LCC Control Board. Change Control Board. Change Master Board.
		NO	Check actuator. Change Lift-Up Sensor 2.
3	LCC Lift-Up Motor operation check: LCC Lift-Up Motor turns after the cassette has been slid into the copier.	YES	Change Master Board.
4	LCC Lift-Up Motor operation check: the voltage across CN5A-2 on LCC Control Board and GND changes from DC0 V to DC24 V while step 3 is being performed.	YES	Change LCC Lift-Up Motor.
		NO	Change LCC Control Board. Change Control Board. Change Master Board.

C099D

Step	Check	Result	Action
1	LCC Control Board and Master Board are connected properly.	YES	Change LCC Control Board. Change Control Board. Change Master Board.
		NO	Correct connection.

(6) C0F32: Faulty ATDC Sensor
C0F33: ATDC adjustment failure

Relevant Electrical Parts	
ATDC Sensor UN2 Power Supply Unit PU1	Master Board PWB-A



C0F32,C0F33

Step	Check	Result	Action
1	ATDC Sensor and Master Board are connected properly.	NO	Correct connection.
2	The voltage across PJ6PU1-5 on Power Supply Unit and GND is DC5 V.	YES	Change I/C. Change Master Board.
		NO	Change Power Supply Unit.

(7) C10XX to C13XX

- These malfunctions are concerned with faulty symptoms as they mainly relate to software, hardware, and communications.

Code	Action
C1038	1. Check the connection between Master Board and MFB2 Board. 2. Reset the malfunction and turn OFF and ON the Power Switch. 3. Change MFB2 Board. Change Master Board.
C1300	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. Check the connection between PH Assy and Master Board. 3. Change PH Assy. Change Master Board.
C133A	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. Check the connection between each of the following and Master Board. A. 2nd Drawer paper source unit B. 3rd Drawer paper source unit C. 4th Drawer paper source unit D. 5th Drawer paper source unit E. OT-102 F. JS-201 3. Disconnect the connection between the copier and A to F and then turn OFF and ON the Power Switch. → If the malfunction code display persists, change Master Board. → If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When “C133A” is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit.
C133B	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. Check the connection between Master Board (copier) and Control Board (Finisher). 3. Unplug the connector between Master Board and Control Board and turn OFF and ON the Power Switch. → If the malfunction code display persists, change Master Board. → If the malfunction is no longer detected, change Control Board.
C13C0	1. Reinstall I/C, reset the malfunction, and turn OFF and ON the Power Switch. 2. Check the connection between I/C fuse and Master Board. 3. Change Master Board.
C13D0	1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in. 2. Check the connection between IC3 of Master Board and EEPROM. 3. Change Master Board. 4. Change EEPROM. ✻ For the precautions to be observed when changing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT.
C13F0	1. Reset the malfunction and turn OFF and ON the Power Switch. 2. Check the connection between PH Assy and Master Board. 3. Change PH Assy. Change Master Board.

(8) The Copier Does not Turn ON.

Relevant Electrical Parts	
Power Switch S1 Power Supply Unit PU1 Panel Board PWB-F Inverter Board 2 PU3	Touch Panel UN1 MFB2 Board MFB2 Master Board PWB-A

• Touch Panel indicates nothing.

Step	Check	Result	Action
1	Power supply voltage check: the voltage across PJ1PU1-1 and -3 of Power Supply Unit changes from AC 0 V to the rated AC voltage when the Power Switch is turned ON.	NO	Check the power outlet voltage. Check the power cord for continuity. Check Power Switch.
2	The voltage across PJ5S1-1 on Power Switch and GND is DC20 V or more when Power Switch is turned ON.	YES	Change Master Board.
3	DC24-V output check: the voltage across PJ8PU1-2 on Power Supply Unit and GND changes from DC0 V to DC24 V when the Power Switch is turned ON.	NO	Change Power Supply Unit.
4	DC5-V output check: the voltage across PJ6PU1-6 on Power Supply Unit and GND changes from DC0 V to DC5 V when the Power Switch is turned ON.	NO	Change Power Supply Unit.
5	DC24-V output check: Unplug CN1F on Panel Board. The voltage across CN1F-1 on cable end and GND, and the voltage across CN1F-2 on cable end and GND, change from DC0 V to DC24 V when the Power Switch is turned ON.	NO	Change MFB2 Board.
6	DC5-V output check: Unplug CN1F on Panel Board. The voltage across CN1F-28 on cable end and GND, and the voltage across CN1F-29 on cable end and GND, change from DC0 V to DC5 V when the Power Switch is turned ON.	NO	Change MFB2 Board.
7	DC24-V output check: the voltage across CN7F-1 on Panel Board and GND changes from DC0 V to DC24 V when the Power Switch is turned ON.	NO	Change Panel Board.
8	AC output check: there is an AC output across CN2PU3-1 and 4 on Inverter Board 2 when the Power Switch is turned ON.	YES	Change Touch Panel.
		NO	Change Inverter Board 2.

5. IMAGE FAILURE

5-1. Image Failure Troubleshooting

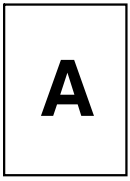
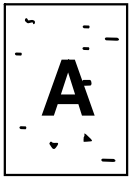
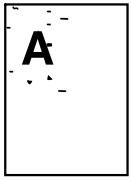
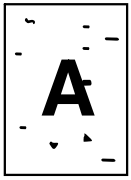
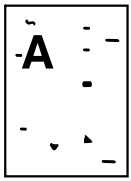
- If any image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

5-2. Initial Checks

- Determine if the failure is attributable to a basic cause or causes.

Section	Step	Check	Result	Action
Installation site	1	"PRECAUTIONS FOR INSTALLATION" contained in GENERAL	NO	Change the installation site.
Paper	2	Recommended paper is used.	NO	Instruct user.
	3	Paper is damp.	YES	Change paper. Instruct user in paper storage.
Original	4	Original not flat	YES	Correct.
	5	Faint original	YES	Instruct user.
	6	Highly transparent original (OHP transparencies, etc.)	YES	Instruct user.
	7	Dirty or scratched Original Glass	YES	Clean or change.
PM parts	8	PM parts relating to image formation have reached the end of cleaning/replacement cycles.	YES	Clean or change. (See Maintenance Schedule.)
Adjustment items	9	There are adjustment items that remedy the image failure when readjusted.	YES	Readjust.

- Determine if the failure is attributable to an input system (IR) or output system (engine) fault.

Check	Result	Cause
Make copies at different zoom ratios.  1177T03YA	  1177T04YA	Input system
	  1177T05YA	Output system

5-3. Troubleshooting Procedures Classified by Image Failure

(1) Blank Copy

<Typical Faulty Images>

4011T516AA

Section	Step	Check	Result	Action
Engine	1	Developing Unit is driven properly.	NO	Correct or change drive coupling mechanism.
	2	Image transfer current contact terminal is dirty or deformed.	YES	Clean or change.
	3	Developing bias contact terminal is dirty or deformed.	YES	Clean or change.
	4	PH shutter (the one located on the laser beam path between PH Assy and PC Drum) opens and closes properly.	NO	Correct.
	5	PC Drum protective shutter opens and closes properly.	NO	Correct.
	6	Master Board and PH Assy are connected properly.	YES	Change I/C. Change PH Assy. Change High Voltage Unit. Change Master Board.
			NO	Correct.
IR	1	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	2	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(2) Black Copy

<Typical Faulty Images>

When engine is faulty. When IR is faulty.

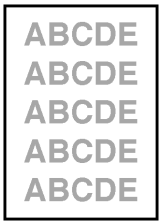
4011T517AA

4011T537AA

Section	Step	Check	Result	Action
Engine	1	Comb Electrode contact terminal is dirty or deformed.	YES	Clean or change.
	2	Grid voltage contact terminal is dirty or deformed.	YES	Clean or change.
			NO	Change I/C. Change PH Assy. Change High Voltage Unit. Change Master Board.
IR	1	Exposure Lamp ON check: Select functions in the following order: Tech. Rep. Mode → Movement Check → Scanner; the Exposure Lamp turns ON when “ON” is selected for “Lighting Exposure Lamp.”	YES	Check step 5 and onward.
	2	The voltage across CN13BCR-1 on BCR Board and GND changes from DC24 V to DC0 V when step 1 is performed again.	NO	Change BCR Board. Change MFB2 Board.
	3	An AC voltage is output from Inverter Board 1 to Exposure Lamp when step 1 is performed again.	YES	Change Exposure Lamp.
			NO	Change Inverter Board 1.
	4	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	5	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(3) Low Image Density

<Typical Faulty Images>



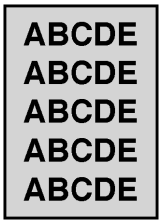
4011T518AA

Section	Step	Check	Result	Action
Engine	1	Image transfer current contact terminal is dirty or deformed.	YES	Clean or change.
	2	Developing bias contact terminal is dirty or deformed.	YES	Clean or change.
	3	Select functions in the following order: Tech. Rep. Mode → Tech. Rep. Choice → Printer. The image problem is corrected when the "Image Density" value is changed toward the plus side.	YES	Make setting again.
	4	Select functions in the following order: Tech. Rep. Mode → Tech. Rep. Choice → Printer. The image problem is corrected when the "VG Adjust" value is changed toward the plus side.	YES	Make setting again.
			NO	Change I/C. Change PH Assy. Change High Voltage Unit. Change Master Board.
IR	1	Shading sheet is dirty.	YES	Clean.
	2	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	3	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(4) Foggy Background

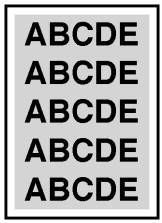
<Typical Faulty Images>

When engine is faulty.



4011T519AA

When IR is faulty.

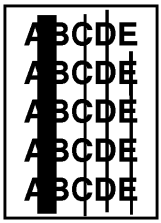


4011T538AA

Section	Step	Check	Result	Action
—	1	Sunlight or any other extraneous light enters the copier.	YES	Protect the copier from extraneous light.
Engine	1	PC Drum is dirty.	YES	Clean.
	2	Comb Electrode contact terminal is dirty or deformed.	YES	Clean or change.
	3	Grid voltage contact terminal is dirty or deformed.	YES	Clean or change.
	4	Charge Neutralizing Sheet contact terminal is dirty or deformed.	YES	Clean or change.
	5	Erase Lamp is dirty.	YES	Clean.
	6	Erase Lamp is conducting.	NO	Change Erase Lamp.
	7	Select functions in the following order: Tech. Rep. Mode → Tech. Rep. Choice → Printer. The image problem is corrected when the “Image Density” value is changed toward the minus side.	YES	Make setting again.
	8	Select functions in the following order: Tech. Rep. Mode → Tech. Rep. Choice → Printer. The image problem is corrected when the “VG Adjust” value is changed toward the minus side.	YES	Make setting again.
			NO	Change I/C. Change PH Assy. Change High Voltage Unit. Change Master Board.
IR	1	Mirror, lens, and/or Original Glass are dirty.	YES	Clean.
	2	Exposure Lamp is dirty or deteriorated.	YES	Clean or change.
	3	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	4	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(5) Black Streaks or Bands

<Typical Faulty Images>

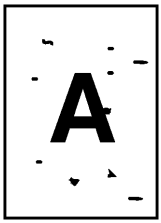


4011T520AA

Section	Step	Check	Result	Action
Engine	1	Paper path is dirty with toner.	YES	Clean.
	2	PC Drum is dirty.	YES	Clean.
	3	Fusing Rollers are dirty or scratchy.	YES	Clean or change.
			NO	Change I/C. Change Master Board.
IR	1	Mirror, lens, and/or Original Glass are dirty.	YES	Clean.
	2	Exposure Lamp is dirty.	YES	Clean.
	3	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	4	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(6) Black Spots

<Typical Faulty Images>

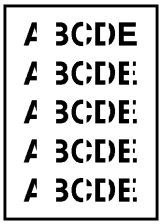


4011T521AA

Section	Step	Check	Result	Action
Engine	1	Paper path is dirty with toner.	YES	Clean.
	2	PC Drum is dirty.	YES	Clean.
	3	Fusing Rollers are dirty or scratchy.	YES	Clean or change.
	4	Comb Electrode contact terminal is dirty or deformed.	YES	Clean or change.
	5	Grid voltage contact terminal is dirty or deformed.	YES	Clean or change.
	6	Charge Neutralizing Sheet contact terminal is dirty or deformed.	YES	Clean or change.
	7	Erase Lamp is dirty.	YES	Clean.
	8	Erase Lamp is conducting.	YES	Change I/C. Change High Voltage Unit. Change Master Board.
			NO	Change Erase Lamp.
IR	1	Original Glass is dirty.	YES	Clean.
	2	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	3	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(7) Blank Streaks or Bands

<Typical Faulty Images>

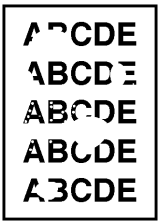


4011T522AA

Section	Step	Check	Result	Action
Engine	1	Image Transfer Roller is dented or scratchy.	YES	Change.
	2	PC Drum is dirty.	YES	Clean.
	3	Fusing Rollers are dirty or scratchy.	YES	Clean or change.
	4	PH Assy window glass is dirty.	YES	Clean.
			NO	Change I/C. Change Master Board.
IR	1	Shading sheet is dirty.	YES	Clean.
	2	Mirror, lens, and/or Original Glass are dirty.	YES	Clean.
	3	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	4	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(8) Void Areas

<Typical Faulty Images>

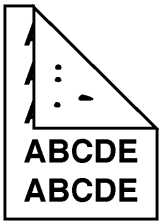


4011T523AA

Section	Step	Check	Result	Action
Engine	1	PC Drum is dirty.	YES	Clean.
	2	Image Transfer Roller is dented or scratchy.	NO	Change.
	3	Fusing Rollers are scratchy or deformed.	YES	Clean or change.
			NO	Change I/C. Change Master Board.
IR	1	Original Glass is dirty.	YES	Clean.
	2	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	3	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(9) Smear on Back

<Typical Faulty Images>

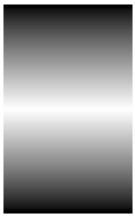


4011T524AA

Section	Step	Check	Result	Action
Engine	1	Paper path is dirty with toner.	YES	Clean.
	2	Image Transfer Roller is dirty.	YES	Clean.
	3	Fusing Rollers are dirty.	YES	Clean.

(10) Uneven Image Density

<Typical Faulty Images>

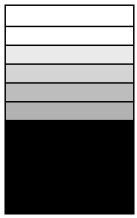


4011T525AA

Section	Step	Check	Result	Action
Engine	1	Image Transfer Roller is dirty or deformed.	YES	Clean or change.
			NO	Change I/C. Change Master Board.
IR	1	Mirror, lens, and/or Original Glass are dirty.	YES	Clean.
	2	Shading sheet is dirty.	YES	Clean.
	3	Exposure Lamp is dirty or deteriorated.	YES	Clean or change.
	4	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	5	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(11) Gradation Reproduction Failure

<Typical Faulty Images>



4011T526AA

Section	Step	Check	Result	Action
Engine	1	Image Transfer Roller is dirty or deformed.	YES	Clean or change.
			NO	Change I/C. Change Master Board.
IR	1	Mirror, lens, and/or Original Glass are dirty.	YES	Clean.
	2	Shading sheet is dirty.	YES	Clean.
	3	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	4	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(12) Rough Image

<Typical Faulty Images>

4011T527AA

Section	Step	Check	Result	Action
Engine	1	Image Transfer Roller is dirty or deformed.	YES	Clean or change.
	2	Image transfer current contact terminal is dirty or deformed.	YES	Clean or change.
	3	Toner has caked or is contaminated with foreign matter in Toner Hopper.	YES	Remove foreign matter. Change toner.
			NO	Change I/C. Change High Voltage Unit. Change Master Board.
IR	1	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	2	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

(13) Periodically Uneven Image

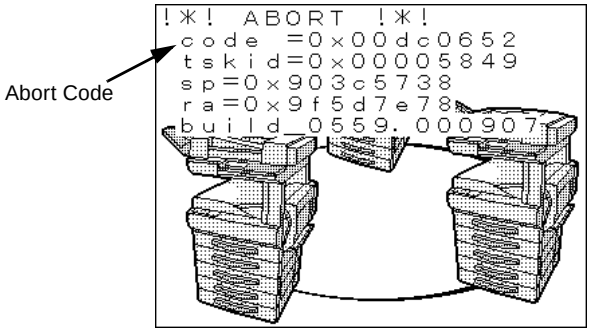
<Typical Faulty Images>

4011T528AA

Section	Step	Check	Result	Action
Engine	1	Developing Unit is driven properly.	NO	Correct or change drive coupling mechanism.
	2	PC Drum and Image Transfer Roller are driven properly.	NO	Correct or change drive coupling mechanism.
	3	Synchronizing Roller is driven properly.	NO	Correct or change drive coupling mechanism.
	4	Fusing Unit is driven properly.	NO	Correct or change drive coupling mechanism.
	5	PH Assy is installed properly.	YES	Change I/C. Change Master Board.
			NO	Correct.
IR	1	Scanner Motor is driven properly.	NO	Correct or change drive coupling mechanism.
	2	Scanner Drive Cables are wound properly.	NO	Wind cables properly.
	3	Scanner rails are damaged or dirty with foreign matter.	YES	Clean or change.
	4	CCD2 Board and MFB2 Board are connected properly.	NO	Correct.
	5	MFB2 Board and Master Board are connected properly.	YES	Change CCD Unit. Change MFB2 Board.
			NO	Correct.

6. ABORT CODES

- The copier displays an abort code on the Touch Panel as it becomes unable to process tasks properly through its software control.



4011T536AA

6-1. List of Abort Codes

- When the system program is aborted, the copier attempts to restart it automatically. If it fails to restart the program, check the electrical component, unit, option, and connection relating to the specific type of the abort condition.

Description	Code	Relevant Electrical Components, Units, and Options
OS processing system failure	0x00000000 to 0x000fffff	MFB2 Board
Device control system failure	0x00100000 to 0x001fffff	MFB2 Board, FAX1 Board, NCUK Board, IIF2 Board, MPK Board, COD Board, FPLAN Board, CEN Board, expansion memory, OT-102, JS-201, FN-109, FN-110, FN-504, JS-100
Copy control system failure	0x00200000 to 0x002fffff	MFB2 Board
Operation system failure	0x00300000 to 0x003fffff	MFB2 Board, Touch Panel, Panel Board
Network function Web processing system failure	0x00400000 to 0x004fffff	MFB2 Board, FPLAN Board, CEN Board
Conversion processing system failure	0x00500000 to 0x005fffff	MFB2 Board
Encoding processing system failure	0x00600000 to 0x006fffff	MFB2 Board, COD Board, MPK Board
File control system failure	0x00700000 to 0x007fffff	MFB2 Board, expansion memory
G3 protocol processing system failure	0x00800000 to 0x008fffff	MFB2 Board, FAX1 Board, NCUK Board, IIF2 Board, MPK Board
G3 device control system failure	0x00900000 to 0x009fffff	MFB2 Board, FAX1 Board, NCUK Board, IIF2 Board, MPK Board

Description	Code	Relevant Electrical Components, Units, and Options
Scanner control system failure	0x00c00000 to 0x00c0ffff	MFB2 Board, BCR Board, Inverter Board 1, AF-9, AFR-17
Scanner control system failure	0x00c10000 to 0x00c2ffff	MFB2 Board, BCR Board, Inverter Board 1, AF-9, AFR-17
Scanner control system failure	0x00c30000 to 0x00c4ffff	MFB2 Board, BCR Board, Inverter Board 1, AF-9, AFR-17
Scanner control system failure	0x00c50000 to 0x00c5ffff	MFB2 Board, BCR Board, Inverter Board 1, AF-9, AFR-17
Scanner device control system failure	0x00d00000 to 0x00d3ffff	MFB2 Board, BCR Board, Inverter Board 1
Scanner device control system failure	0x00d40000 to 0x00d7ffff	MFB2 Board, BCR Board, Inverter Board 1
Scanner device control system failure	0x00d80000 to 0x00dbffff	MFB2 Board, BCR Board, Inverter Board 1, AFR-17
Scanner device control system failure	0x00dc0000 to 0x00dfffff	MFB2 Board, Scanner Home Position Sensor 1, Scanner Home Position Sensor 2
Printer sequence system failure	0x00e00000 to 0x00e000ff	MFB2 Board, FPLAN Board, Pi3502
Printer sequence system failure	0x00e00100 to 0x00e001ff	MFB2 Board, FPLAN Board, Pi3502
Printer sequence system failure	0x00e00200 to 0x00e002ff	MFB2 Board, FPLAN Board, Pi3502
Printer sequence system failure	0x00e00300 to 0x00e003ff	MFB2 Board, FPLAN Board, Pi3502
Printer sequence system failure	0x00e00400 to 0x00e004ff	MFB2 Board, FPLAN Board, Pi3502
Printer system failure	0x00f00000 to 0x00f0ffff	MFB2 Board, FPLAN Board, Pi3502
EP-NET sequence system failure (U.S.A. and Canada only)	0x00f10000 to 0x00f1ffff	MFB2 Board, DT-103
Counter sequence system failure	0x00f20000 to 0x00f2ffff	MFB2 Board
Other failures	0x01100000 to 0x011000ff	MFB2 Board
Copy sequence system failure	0x01100100 to 0x011001ff	MFB2 Board
Overseas controller print sequence system failure	0x01100200 to 0x011002ff	MFB2 Board, Pi3502
Overseas controller reception system failure	0x01100300 to 0x011003ff	MFB2 Board, Pi3502

Description	Code	Relevant Electrical Components, Units, and Options
Function sequence system failure	0x01100400 to 0x011004ff	MFB2 Board
OS message processing system failure	0x02000000 to 0x020fffff	MFB2 Board, FPLAN Board, CEN Board
Network processing system failure	0x03000000 to 0x030fffff	MFB2 Board, FPLAN Board, CEN Board

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4011-7991-11